THE

# CLASSICAL FARRIER.

EXHIBITING THE WHOLE

## *ANATOMY*

OF THAT NOBLE ANIMAL THE

## *HORSE.*

PERFECTLY DESCRIBING, BY
ELEGANT ENGRAVINGS ON COPPER-PLATES,
THE VARIOUS PARTS OF THE HEAD, BODY, AND LIMBS,
BOTH EXTERNAL AND INTERNAL.

TOGETHER WITH
THE SIGNS, CAUSES, AND TRUE
*METHODS OF CURING EVERY DISEASE INCIDENT TO HORSES.*

IN THE APPENDIX ARE
GENERAL RULES FOR THE
PROPER MANAGEMENT OF RUNNING-HORSES, &c.

ENTIRELY BY
AN IMPROVED AND EXPERIENCED MODE OF PRACTICE.

TO WHICH IS ADDED,
A COPIOUS INDEX OF DISEASES AND THEIR REMEDIES.

By WILLIAM MERRICK, Farrier,
OF SWALLOW-STREET, ST. JAMES'S.

*THE SECOND EDITION.*

INSCRIBED TO
NOBLEMEN, GENTLEMEN, AND EVERY PERSON CONCERNED
IN HORSES.

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# PREFACE.

THE extenſive Purpoſes of pleaſurable and profitable Service, to which we adapt that noble Animal the Horſe, moſt powerfully intereſt us in the Preſervation of the Species.

Yet an improvident Waſte of Property, in the Barbarity of promiſcuous Deſtruction, the hourly Complaint of Prudence and Humanity, are, in Fact, equally true and monſtrous.

Some Part of it is undoubtedly imputable to Neglect and Brutality of inferior Servants, with whom the Maſter occaſionally intruſts: But it is moſtly the Effect of ignorant Preſumption in thoſe who undertake to reſtore this valuable Animal, when under the

Preſſure of Infirmity or accidental Calamity; or, in other Words, of thoſe who undertake the Practice of Horſe-Medicine. Theſe Men diſgrace that rare Character, a Surgeon-Farrier; and under theaſſumed Appellation of vulgar Dignity, an Horſe-Doctor, tax Owners without Conſcience, deal Deſtruction without Remorſe, and prove, in Reality, ſo many Executioners.

Thoſe who have found it their Intereſt to take the beſt Information, affirm this poſitively: We can declare it on the moſt extenſive Obſervation. Were there not ſomething ludicrous in the Expreſſion, we are ſure a general Bill of Horſe-Mortality would warrant our Aſſertion, and prove that they moſt die in their very prime, with the Stamina of Life in Perfection, and with every conſtitutional Advantage in Favour of judicious Farriery.

Such being the Caſe, any candid Reaſoner, having the Preſervation of the

the Species for the Object of a mere Enquiry, might ſubmit his Thoughts, ſecure of an attentive if not profitable Peruſal; not that we are without Authors, who have profeſſionally written on the Art of preſerving Horſes, by the Practice of Horſe-Medicine or Farriery; and who have had a Name in their Day, although they are now generally in Diſrepute, and out of all Uſe.

The Truth is, that rational general Principles have ſyſtematiſed this Art; yet, as the Judgement muſt apply and modify to each various Caſe of Practice, and that muſt be directed by Experience, it is urged, that every additional Experiment improves the Art; and that we of To-day, are juſt ſo much more enlightened than our immediate Predeceſſors.

This Argument conſtitutes at once that Apology and complete Juſtification, which Deference to the Public requires from

from thoſe who are about preſenting themſelves Candidates for its Patronage and Favour, though their Deſign be to inſtruct, with a View to preſerve, and the Execution ſhould prove equal to the Deſign. We therefore ſit down to pen a compendious Treatiſe on Horſe-Medicine and Anatomy; and ſhall endeavour to compriſe, in as few Sheets as poſſible, every Thing which is really uſeful.

We ſhall make little Preliminaries with our Readers in two or three introductory Sections, in order to our right underſtanding one another; and then proceed to arrange the Maladies to which this Animal is liable, and the Remedies to be preſcribed, under proper Heads; allotting to the Diſeaſe and its Cure one ſeparate and entire Section; and carrying the Whole up to the laſt Stage, or Line of experimental Improvement on ſo uſeful a Creature.

To arrogate Perfection to any Production, would be to contradict our own Opinion

Opinion already declared, and amount to a Degree of Preſumption, at which we believe no reaſonable Man will ever arrive.—But, perhaps, the Syſtem of Perſons who have practiſed Anatomy and the Diſeaſes on which they write, who have had the moſt variegated and extenſive Practice in every Latitude and Climate, may, till we ſhall be better informed, bid fair to become the Standard of good, warrantable, and approvable Practice.

If ſo, we ſhall be abundantly gratified in a reaſonable Return of Profit; and congratulate our Judgement on having treated the Subject with Perſpicuity, and a Simplicity ſuited to every Capacity;—diſdaining to perplex the unſcientific Reader with hypothetical Reaſoning, and Solutions of abſurd Phænomena, in an unmeaning Parade of Words, and declamatory Jargon of ſplendid Nonſenſe.

# INTRODUCTION.

WE ſhall firſt define the Mode whereby the animal Body is nouriſhed, and rendered fit to perform the ſeveral Functions of Life.

As ſoon as an Animal gathers in his Food, the Glands of the Mouth pour forth their Liquor, not only that it may be the more eaſily chewed, but that it may be thereby rendered ſoft, and more readily paſs through the Gullet into the Stomach. When it has arrived there, ſeveral Inſtruments become uſeful to aſſiſt Digeſtion. The Juices which flow from the Glands of the Stomach, and the Drink, help to keep it moiſt; ſo that by the continual Action of its Sides, which, by virtue of its muſcular Fibres, perpetually rub one againſt another, and by the Aſſiſtance of the incloſed Air, all the Parts and Particles of the Food are greatly ſeparated. The groſſer Parts are carried downwards by the periſtaltic Motion of the Guts, the Preſſure of the Midriff and Muſcles of the lower Belly,

and are voided at the Fundament, while the finer Parts conſtitute that white milky Subſtance which we call Chyle.

The Chyle being thus prepared in the Stomach, paſſes by Degree out at its lower Orifice into the ſmaller Guts, and is, by the ſame Powers, ſqueezed into the ſmall and minute Orifices of the lacteal or milky Veins, which ariſe from all Parts of the ſaid Guts, by fine capillary or hair-like Tubes. And although theſe Tubes are ſo ſmall that they cannot be perceived but in Animals opened alive immediately after eating, at which Time they are full of Chyle, yet every one of them imbibes and drinks up Part of the refined Aliment; and as they run from the Sides of the Guts to the Glands in the Meſentery, they unite and form larger Branches, and are called the lacteal Veſſels of the firſt Kind. Theſe Extremities of the Lacteals having Communication with the ſmall capillary Arteries of the Guts, receive a thin Lympha, which not only dilutes the Chyle and helps to drive it forwards, but alſo waſhes the Lacteals and Kernels, that they may not fur and be ſtopped up by its ſtaying in them upon faſting.

There

There are other Lacteals which are larger, and are called *Venæ Lacteæ Secundi Generis*, or the Lacteals of the ſecond Kind: Theſe receive the Chyle that was diſcharged by the firſt into the veſicular Kernels of the Meſentery, and carry it immediately into its common Receptacle.

The Lymphatics, which ariſe from moſt of the Inteſtines of the lower Belly, and from the lower extreme Parts, empty their Liquor into that Receptacle, which, being mixed with it, makes its Parts ſtill more fine and fit to be united with the Blood; and as the Chyle leaves its Receptacle, and aſcends the thoracic Duct, and thoſe which come from the Head, Neck, and Arms, diſcharge their Contents into the jugular and ſubclavian Veins, by which it becomes yet more diluted and perfect as it enters into the Maſs of Blood.

The Lacteals and thoracic Duct have Valves which open for the Paſſage of the Chyle, but ſhut themſelves ſo as to hinder its Return back again; and the thoracic Duct being placed behind the great Artery, receives a new Impetus by its Pulſation, which alſo forwards the Aſcent of the Chyle. The Lymph-Ducts contract themſelves at unequal Diſtances, and have alſo their little Flood-Gates, which

permit their Liquor to take its Courſe towards the Chyle-Veſſels, but hinder its coming back the ſame Way; by all which Means the animal Body can never be deprived of its Nouriſhment, but in caſe of Sickneſs or Want.

The Chyle being prepared in the Stomach and ſmall Guts, as has been obſerved, and being alſo farther refined by the Commixture of the Lympha in its Paſſage through the Lacteals and thoracic Duct, is conveyed by that Canal to the left ſubclavian Vein, where it opens itſelf at ſeveral Orifices, and mixing with the Blood, is carried directly to the right Ventricle of the Heart, and is no farther to be traced under the Name of Chyle, but henceforth becomes a Part of the Blood.

Now that all the Blood takes a circular Courſe through the Heart, is an Opinion ſo generally received, that we need ſay nothing about it, but proceed to ſhew the Way and Manner by which that is performed.

The aſcending and deſcending Trunks of the Cava unite oppoſite the Heart, and open into its right Auricle, or Ear; and at that Place where they enter, there is a ſmall Protuberance made by their Coats on the Inſide, like an Iſthmus, which hinders the Blood of either Trunk

Trunk from ruſhing againſt the other, but directs both into the Ear. The right Ear receives in its Diaſtole, that is, when it is diſtended, all the Blood from both Branches of the Cava, which it empties by its Syſtole into the right Ventricle of the Heart, which at the ſame Time is in its Diaſtole. The right Ventricle in its Syſtole preſently empties itſelf into the pulmonary Artery, or that of the Lungs, for it cannot return again into the Ear, becauſe of the Valvulæ Tricuſpides, as that which is once received into the Ear, cannot return into the Cava, becauſe of the tendinous Circle about its Mouth, which contracts itſelf as often as the Ear is filled. As ſoon as the Blood has taken its Progreſs through all Parts of the Lungs in the pulmonary Artery, it is received from its capillary Branches into thoſe of the pulmonary Vein, and is conveyed by it back again into the left Ear of the Heart, which, by its Contraction, thruſts the Blood into the left Ventricle, then in its Diaſtole, and when that is contracted, it is thruſt out into the Aorta; for it cannot come back again into the Ear, becauſe of the Valvulæ Mitrales.

The Aorta having received the Blood from the left Ventricle, ſends out two ſmall Branches called the Coronariæ, which go to the Heart, and then forming a ſmall Arch, by which the Force

Force of the Blood is ſomewhat abated, in its Expulſion it is divided into the Aorta aſcending and deſcending.

The aſcending Trunk climbing up by the Wind-Pipe to the Top of the Breaſt, ſends forth two Branches, called the Subclavian, which run under the Channel-Bones on each Side. Theſe ſend forth ſeveral other Branches, both from their upper and under Side: From their upper Side ſpring thoſe Arteries, which, in Men, are called the Cervical, being partly ſpent on the Muſcles of the Neck and Breaſt, and partly on the Glandulæ Thyroides. Out of their lower Side proceed the ſuperior Intercoſtals, which paſſing through the Cheſt, ſend forth ſeveral Branches to the Arms in human Bodies, and to the Fore-Legs in brute Creatures.

Where the Subclavians go off from the great Artery, on each Side there ariſe two other principal Branches, which aſcend upwards towards the Head, and are called the carotid Arteries: Theſe are ſpent chiefly on the Brain, forming there the Rete Mirabile, and Plexus Choroides, &c. but as they aſcend, they detach ſeveral Branches to the Wind-Pipe, Larynx, ſome to the Tongue and lower Jaw, and others to the external Parts of the Head. By theſe four principal Branches, to wit, the Subclavian

Subclavian and Carotids, the whole Head and Neck, as alſo the external Parts of the Cheſt and Fore-Legs, are ſupplied with Nouriſhment.

The deſcending Aorta, as it goes down towards the Midriff, ſends forth the inferior Intercoſtals and the bronchial Artery, which accompany the Branches of the Wind-Pipe in the Lungs; and when it arrives at the Midriff, it detaches thoſe called the phrenic Arteries, which are diſperſed through the Midriff and Mediaſtinum. After it has paſſed through the Midriff, it marches downwards as far as the laſt Vertebra of the Loins, but by the Way ſends off ſeveral Branches to the Stomach and other Inteſtines, as the cæliac, the ſplenic, and the upper meſenteric; after theſe ſpring forth the emulgent Arteries, one on each Side, which go to the Kidneys; and below theſe, from the main Trunk, alſo ariſe the Spermatics, which go to the Teſticles and Ovaria, &c. then the lower Meſenterics, communicating with the upper, ſupply the whole Meſentery.

As ſoon as the Trunk of the great Artery has reached the Top of the Os Sacrum, it divides itſelf into two equal Branches, called the Iliacs, which are again ſubdivided into the external and internal. From the internal proceed

ceed thoſe called Muſculæ, which are beſtowed on the Pſoas and Muſcles of the Buttocks; as alſo the Hypogaſtrics, which run to the ſtreight Gut, the Matrix and Bladder, the Proſtates and Yard, and to all the other Parts contained within the Pelvis. From the external Iliacs ariſe firſt the epigaſtric Arteries, which turning forwards, creep along the Outſide of the Rim of the Belly as far as the Navel, where they meet the Mammary. The next are thoſe called the Pudenda, which go to the Privities of both Sexes. Afterwards the iliac Branches go to the Thighs, and are then called the crural Arteries, ſupplying the Hind-Legs and Feet with many conſiderable Branches.

This is the Order and Diſtribution of the principal Arteries of almoſt all Animals, each of which Arteries are ſubdivided into others, and theſe again into others, till at laſt the whole Body is overſpread with moſt minute capillary or hair-like Arteries, which frequently communicate one with another; ſo that when any ſmall Artery is obſtructed, the Blood is brought by the communicating Branches to the Parts below the Obſtruction, which muſt otherwiſe have been deprived of its Nouriſhment. Nature has obſerved the ſame Œconomy in the Diſtribution of the Veins, that in caſe

caſe any Vein ſhould be obſtructed, the Blood might not ſtagnate, but be alſo returned by other communicating Branches.

But before we proceed to an Account of the Veins, we ſhall obſerve farther concerning the Arteries, that as it is their peculiar Province to carry the Blood from the Heart, and diſtribute it into all Parts of the Body, they are perfectly fitted for that Purpoſe by their Structure: For an Artery being compoſed of three Coats, the middlemoſt very ſtrong, and endued with Elaſticity by Virtue of the ſpiral Direction of its Fibres, it is thereby enabled to bear the frequent Sallies of the Blood in its Expulſion from the Heart; and leſt theſe Fibres ſhould ſeparate upon any violent Impulſe, the innermoſt Coat, though a fine tranſparent Membrane, yet it is wove ſo cloſe as to be able to preſerve the middlemoſt, and keep the Blood within its proper Channels.

It is moreover to be obſerved, as the Arteries are conical Channels, and grow gradually ſmaller, ſo their Coats grow proportionably thinner. And the Coats of the Veins ſeem, according to the Opinion of moſt modern Anatomiſts, to be only a Continuation of the Coats of the capillary Arteries reflected back again towards the Heart. But although the Coats of

the Veins be the ſame with thoſe of the Arteries, yet it is to be taken Notice of, that the muſcular Coat of all the Veins are as thin as in the capillary Arteries; the Preſſure of the Blood againſt the Sides of the Veins being much weaker than that againſt the Sides of the Arteries, and therefore not requiring its Channels to be ſo thick and ſtrong.

The Veins are not endued with Pulſation, as the Arteries, becauſe the Blood falls into them with a continued Stream from the capillary Arteries, which, by reaſon of their Smallneſs, have only a very weak, or ſcarcely any Motion; and then as it advances towards the Heart, it moves from a narrow Channel to a wider; and therefore its Motion would have been extremely languid and ſlow, had not Nature contrived ſeveral Helps to promote its Paſſage. For that Reaſon, as it is the Office of the Veins to return and carry back all the Blood to the Heart, there is to be ſeen in moſt of them (eſpecially in ſuch as have their Direction upwards) ſeveral Valves at convenient Diſtances, ſometimes one, and ſometimes more, like ſo many half Thimbles ſtuck to their Side, with their Mouths towards the Heart; and as the Blood moves that Way, they are preſſed cloſe to the Sides of the Vein; but if it ſhould fall back, it muſt fill the Valves, and ſtop up the Channel

nel that no Blood can repaſs them. And beſides theſe Valves, it is alſo obſervable that in many Places where there is a Branch of a Vein, there is an Artery lies under it, which, by its continual Pulſation, helps to forward the venal Blood towards the Heart; ſo that although the Blood moves from a narrow Channel into a wider, as has been obſerved, and its Motion is in many Places directly upwards, yet nothing can happen in a natural Way to retard its Progreſs.

But we ſhall detain the Reader no longer with the Difference between the Veins and Arteries, believing what has been already ſaid, ſufficient to give any one a Notion of their ſeveral Offices; we ſhall therefore proceed to give ſome Account of the Order and Diſtribution of the Veins, as they correſpond with the Arteries.

As the great Artery receives the Blood from the Heart, and diſtributes it from thence into all Parts of the Body, ſo the Cava, like a main River, receives into it the Blood which is conveyed from all Parts of the Body, proceeding at firſt from Veſſels infinitely ſmall, and afterwards uniting in large Branches, which empty themſelves into its ſuperior and inferior Trunks, at proper and convenient Diſtances.

The ſuperior or deſcending Cava, receives firſt the coronary Vein from the Heart, near that Place where it opens into the Ear. As ſoon as it pierces the Pericardium, it receives the *Venæ ſine pari*, which is made by the Union of the Veins of the Ribs on each Side.

The ſubclavian and jugular Veins are pretty large Veſſels, which anſwer to the ſubclavian and carotid Arteries, and are the next of any Note that open into the deſcending Cava. The Jugulars are divided into the external and internal; the external is that large Vein which runs along the Outſide of the Neck, called in a Horſe the Neck-Vein, and is moſt commonly opened when Bleeding is required. This Vein receives and carries back that Portion of the Blood which comes from all the external Parts of the Head and Face, viz. from the Eye-Veins, the Temple-Veins, and thoſe of the Noſe and Lips. Into the internal Jugulars open all thoſe Veins which lie within the Bars of the Mouth, and under the Tongue, and all the other Branches which communicate with thoſe of the Brain.

The ſubclavian Veins, viz. the two large Branches which paſs under the Channel-Bones, not only receive a great Part of the Blood which comes from the Cheſt, but likewiſe have all thoſe

thoſe Veins open into them which run along the outward Part of the Breaſt, Fore-Legs, and Feet, ſuch as the Breaſt-Veins that run between the Fore-Legs, which Farriers ſometimes open in Fevers, &c. the Plate-Veins, the Shank-Veins, and Shackle-Veins, as alſo the Veins of the Cornet and Toe, which are uſefully opened in Diſeaſes of the Legs and Feet.

The Cava aſcendens, or the great aſcending Vein, which anſwers to the great deſcending Artery, receives alſo all thoſe Branches of Veins which return the Blood from moſt Parts of the lower Belly, viz. the Meſenteria from the Meſentery, the Portæ from the Liver, the Emulgents from the Kidneys, the ſpermatic Veins from the Parts of Generation in both Sexes. And after it divides itſelf, as the Artery, into the external and internal Iliacs, it receives ſeveral Branches. Into the internal, open the Hypogaſtrics, by which the Blood is returned from the Matrix, the Bladder, and ſtreight Gut; and into the external open the Epigaſtrics, with Blood from the Peritonæum and the external Parts of the lower Belly; and into the Epigaſtrics open the Crurals, which receive all the Blood that flows from the extreme Parts; for into them open thoſe Veins, improperly called by Farriers the Kidney-Veins; as alſo the Spavin-Veins, the Flank

and

and Spur-Veins, with that of the Rump, called the Tail-Vein.

Theſe Things being premiſed, it will be eaſy for any one to form an Idea of the Diſtribution of the Blood into all Parts of the Body; eſpecially if it be farther conſidered that the Veſſels in which the Blood flows, are divided and ſubdivided into an infinite Number of Branches; and that even all the Parts of the Body, whether thoſe that are hard, or thoſe that are denominated ſoft Parts, ſeem to be no other than ſo many infinitely-ſmall Tubes variouſly modified and combined together; by which Means the whole Body is filled with Blood and other nutritious Juices, and receives its Nouriſhment from Blood, as that is recruited and repaired by the Aliment. Hence the Neceſſity of conſtant Supplies of Food and Reſt, to compenſate the continual Diſcharge by inſenſible Perſpiration and other Evacuations.

But this will appear ſtill more evident, when we conſider, beſides the Effluvia that go off inſenſibly in this manner, through the Pores and Interſtices of the Body, that moſt of the Glands are continually ſeparating ſome Part of the excrementitious Matter from the Blood; though all that is diſcharged by the Mouth and Noſe, by Urine and Dung, and by Sweat, or any other ſenſible Way whatſoever, does not near amount to the Diſcharge that is made through

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the Pores by inſenſible Tranſpiration. This is ſo palpable a Truth, and has been ſo well proved by the Experiments we have made, that there need be nothing farther ſaid about it. And therefore we may conclude, that ſince the Bodies of all Animals are thus compounded and made up of Matter which is full of Pores and Interſtices, and maintained by Juices which are again capable of being diſſipated and waſted through thoſe Pores, there muſt be continual Supplies of Food to maintain thoſe Bodies in an uniform State.

Now it is plain that all Bodies ſuffer a Diſſipation and Waſte, if the Quantity of the Aliment be abated: For in ſuch a Caſe, we obſerve any Creature grow lean and emaciate. It is alſo evident that all ſuch ſuffer by Exerciſe, by hard Labour, by Want of Reſt, when it is the ſtated Time of Sleep; and by many other Ways not neceſſary to be mentioned. And therefore all Creatures are under an indiſpenſible Neceſſity both of feeding and taking ſuitable Reſt, to make up for the Waſte and Decays of Nature; for as often as there is a great Diſſipation by Labour, or by any other Way, the ſmall Fibrillæ are thereby abraded and wore, by the quick Motion the Blood and Spirits were in during that Exerciſe; or even if the Body was not in Exerciſe, it will ſuffer by the conſtant Activity of the Spirits themſelves; ſo that a ſtated Time of Reſt muſt alſo be neceſſary

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for all Bodies, as well as Food: For when the Body is at reſt, the Spirits are, as it were, lulled and laid aſleep; ſo that the Blood acquires, during that Time, a more uniform and gentle Motion, and is more equally diſtributed into all Parts, and thereby fills up all the vacant Spaces that are made during the Time of Exerciſe, &c.

We ſhall only obſerve farther, that Blood, examined chemically, is found to conſiſt only of the following Principles, viz. Volatile Salt and Spirit, ſome Phlegm and Sulphur, and a little Earth, but little or no fixed Salt. Now every one who is the leaſt acquainted with Chemiſtry, muſt be ſenſible how many different Sorts of Liquors may be formed out of a few Principles variouſly combined together; ſo that, although the Blood ſimply conſiſts only of theſe above-mentioned, and ſeems to be made only of red and ſerous Parts; yet, there are near thirty Liquors ſeparated from it, owing to the different Structure of the Glands, ſome of which are ſo ſmall, and ſo variouſly wound up, that nothing but the moſt minute and ſpirituous Particles of the Blood can paſs through them; and doubtleſs of ſuch a Structure is the cortical Part of the Brain, by which the animal Spirit are ſecerned.

THE

# THE CLASSICAL FARRIER.

## SECT. I.

### OF THE HIDE, &c.

THAT which we call the COAT, is the hair, and when very ſmooth, is moſt agreeable to the eye, and a defence to the animal from cold and heat, as well as from accidents he may be liable to among thorns and buſhes, when turned looſe to feed.

The firſt fleſhy tegument, or cover, is the ſcarf-ſkin, and is that which riſes ſo eaſily into a bliſter, by being pinched or ſcalded; it is not endued with any tender ſenſation, but will bear the touch without pain; it is produced from the hide, which it involves and covers on all parts, and has from thence its nouriſhment. Its uſe is not only to cover the true ſkin, and defend it from thoſe painful ſenſations to which it would be expoſed, as we daily obſerve, when it is fretted off, but, as it reſembles a curious net-work, and is full of little holes or pores, it is thereby ſuited to give way to the excrementitious matter which continually exhales from the body.

The next common covering is the SKIN (properly ſo called) or HIDE, which lies immediately under the other. It is nouriſhed with veins, arteries, &c. and is alſo porous for the paſſage of the ſweat, or other perſpirable matter, which is ſeparated from a vaſt number of little glands, which lie on the inſide of it; and as the ſcarf-ſkin is a defence to the hide, ſo the hide is a defence to thoſe other parts which lie under it.

Underneath the ſkin is placed the fleſhy pannicle, which is muſcular, and helps to draw the ſkin into wrinkles, by which means a horſe throws off the duſt, flies, or other things that hurt him. It is alſo nouriſhed with its proper veins and arteries, &c. and beſides its peculiar uſes, it ſerves, in concert with the ſkin, to defend the body from external injuries, viz. by keeping it warm in winter, and preventing a too great exhalation of the ſpirits in hot weather.

Beſides the teguments, there is the fat, and common membrane of the muſcles. The fat, which lies between the fleſhy pannicle and the ſaid membrane, is diſtinguiſhed from that which covers the caul, by its oilineſs, and is ſaid to be generated of the more unctuous particles of the blood, working through the veſſels, and detained there by the cloſeneſs of the ſaid pannicle. It is not one continued covering in horſes, as in bullocks, and ſome other animals, but chiefly fills up the inteſtices of the muſcles externally, and is not only a defence, as the other teguments are, but ſerves to make a horſe look plump, ſmooth, and beautiful. How far it is capable of being again converted into nouriſhment, we ſhall not offer here to determine.

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As to the membrane of the muſcles, which is the innermoſt of all the common teguments, it is ſaid to take its origin from the back; and ſpreading itſelf all over the body, is knit to their proper coats by a great number of ſmall fibres, yet not ſo cloſely as to hinder their action. It is in a horſe conſiderably thick, and ſerves to ſtrengthen and confirm all the muſcles in their proper ſituation, and to be a capſula, or caſe, to defend them from injuries.

## *SECT. II.*

### OF THE MUSCLES OF THE EYE-LIDS AND EYE.

THERE are three pair of muſcles to the eye-lids, one pair to open them, and two to ſhut them.

That which openeth the eye-lids is called *rectus*, or *aperiens*, from its office. It ſpringeth, with a ſlender but fleſhy beginning, from the ſame place as the elevator of the eye doth, to wit, at the hole through which the optic nerve paſſes into the orbit, and holds the ſame courſe with it, till at laſt, parting from it with a pretty broad but thin tendon, it is inſerted into the griſtle at the edge of the upper eye-lid, where it ſerves to open the eye-lid by lifting it up.

The other two muſcles of the eye-lids are called *ſhutters*, and otherwiſe ſemicircular, becauſe each of them runs the length of the eye-lid; they are ſeated between the membrana carnoſa and the inner ſmooth ſkin that lines the eye-lids. That which draweth down

the upper lid, is larger than the muſcle which moveth the lower lid to ſhut it.

The frontal muſcles are alſo thought to contribute ſomething to the motion of the eye-lids, as they ariſe from the ſkull near the coronal-ſuture, and are inſerted in the eye-brows; for by their action they contract the ſkin of the forehead, by which means the upper eye-lid is ſometimes drawn a little upward.

The eyes have ſeven pair of muſcles, of which four are ſtreight, two oblique or ſlanting, and the other pair circular or round. The ſtreight ſerve to move the eyes upwards and downwards, the oblique move them obliquely, and the circular pair keep the eyes ſuſpended in their place. They all ariſe from the ſame origin, to wit, from the membrane that inveſts the orbit of the eye, near the hole through which the optic nerve doth paſs into the ſaid orbit, touching one another at their beginning, but immediately ſeparating into fleſhy round bodies, from which they again degenerate toward their termination into a thin membranous ſubſtance, which is inſerted into the horny coat of the eye, encompaſſing it as far as it is white.

Theſe muſcles have their ſeveral appellations from their ſeveral actions. The firſt of the ſtreight muſcle, from its office of pulling up the eye, is called *attolens*, and in man ſometimes *ſuperbus*, as the ſecond is called *deprimens* or *humilis*. The third is called *adducens*, becauſe it pulleth the eye towards the noſe. And the fourth *abducens* or *indignatorius*, from its office of drawing the eye to the outer corner; which turn or aſpect of the eye betokens anger or ſcorn.

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When theſe muſcles act ſeparately, they have theſe four ſeveral motions; but when they all co-operate or work together, they have but one tonic motion, which is principally to keep the eye ſteady and fixed; but in beaſts, that have the ſuſpending muſcle, that action is performed chiefly, if not altogether, by it.

The next are the two oblique muſcles, which alſo are termed the *circumagentes*, from their rolling the eye about, and are diſtinguiſhed by the names of *major* and *minor*; the one being longer than the other, though ſomewhat ſlenderer; the longer ariſeth from the ſame origin with thoſe above deſcribed, and endeth in a ſmall round tendon, which paſſeth through the tranſverſe griſtle called *trochlea*, into the inner corner of the eye: this rolleth the eye inwards, as the other (which riſes from the chink in the lower part of the orbit, and has the ſame inſertion with the major) rolls it towards its outward corner.

The ſeventh, or round muſcle, is called the *ſuſpenſorius*, or *ſeptimus brutorum*, being peculiar to brutes only. It is ſhort and fleſhy, encompaſſing the optic nerve, and is inſerted in the hinder part of the cornea. This muſcle not only aſſiſteth the tonic motion of the eye, but is alſo uſeful to keep the eye ſuſpended, leſt, by looking continually towards the ground, it ſhould hang too much outward.

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## SECT. III.

### OF THE MUSCLES OF THE NOSE, LIPS, AND CHEEKS.

THE noſe is moved by four pair of muſcles, two pair called the *adducent*, or cloſing muſcles, and two pair termed the *abducent*, or widening muſcles.

The firſt pair of the abducent ariſe from the upper jaw-bone near the firſt proper pair of the lips, and are inſerted partly into the lower part of the wings, or griſtly circumference of the noſtrils, and partly into the upper part of the upper lip.

The ſecond pair take their origin near the eye, with an acute and fleſhy beginning, and end on the wings, as the other pair, but more expanded. The uſe of theſe two pair of muſcles is to draw the griſtly circumference or wings of the noſtrils upwards, and ſo to widen and open them.

The other two pair, or adducent muſcles, ariſe, the one from the root of the griſtle, which aſcending croſs-ways to the ridge or top of the noſe, are there inſerted. The other are hid in the cavity of the noſtrils, under the inner coat that clothes them, and at their inſertion are ſpread on the griſtly circumference.

The firſt pair of theſe muſcles being contracted, depreſs the alæ, or griſtles of the noſe; and the latter pair draw them inwards, and ſo cloſe the noſtrils; to which motion the orbicular or round muſcle of the upper lip is alſo aſſiſtant; for by its drawing it downward, it does at the ſame time contract the noſtrils.

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To the lips belong ſeveral pair of muſcles, ſome of which are proper to them alone, and others are common both to them and the cheeks.

The firſt common muſcle is called the *quadratus*, or four-ſquare muſcle. It ariſes from one of the vertebræ of the neck, and ſome part of it from the ſhoulder-blade, the collar-bone, and breaſt-bone; from all which it aſcends obliquely to the chin, lips, and root of the noſe, which part it draws ſlanting downward.

The ſecond is the buccinator, which ſprings from almoſt the whole length of the upper jaw-bone, at the root of the gums; it is ſeated under the upper part of the former, and is ſpread over the whole dimenſion of the cheek. Beſides its uſe in contracting the cheek in horſes and other brute creatures, it greatly aſſiſts the action of chewing, by turning the meat, which falls between the teeth and the cheek, over again, to be broken and ground.

The muſcles which are proper to the lips only, are accounted by anatomiſts five pair, and one ſingle muſcle. The firſt is called *par attolens*, or lifters-up of the lip. This pair ſpring from the upper jaw, where it forms the hollow of the cheek, and are inſerted in the upper-lip, near the noſe. When both theſe muſcles act together, they draw the upper-lip directly upwards; but if only one acts, then but one ſide is drawn upward obliquely. The action of theſe muſcles is very perceptable when a horſe ſmells at any thing pungent or offenſive to his noſtrils.

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The ſecond pair are the *abducent*, or drawers of the lip on one ſide. They ariſe from the cavity that is under the os jugale, from whence they take their courſe on each ſide to the middle of the upper lip, where they are inſerted with a ſtrong round tendon; theſe jointly move the lip upwards and outwards, as the former; and when they act ſeparately, they aſſiſt the former, by helping to draw the lip ſideways.

The third pair is called by Riolanus *zugomaticum*, or *jugale*, from their riſe, which is outwardly from the proceſs of the bone of that name. Theſe reach to the ſides of the upper lip, and are inſerted near the corner of the mouth. Their uſe is to draw the lip ſideways upwards.

The fourth pair is called *deprimens*, from their office of drawing the under lip downwards. They ariſe fleſhy and broad from the lowermoſt part of the lower mandible, from whence each marches obliquely to the under lip, and are inſerted into it about its middle. This pair aſſiſt in the ſame action with the firſt of the common muſcles called the *detrahens quadratus*.

The fifth pair, or oblique detrahens, from their office of drawing the lower lip obliquely downwards and outwards. They take their beginning from the ſides of the lower jaw, from whence they aſcend upwards, and are each inſerted into the corners of the lower lip.

The odd muſcle, or *orbicularis*, ſo called becauſe it goes round both lips, and ſometimes *conſtringens*, as it ſerves like a ſphinctre, to purſe up or contract

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the mouth, makes up the greateſt part of the lips, and has all the other muſcles inſerted into it.

## *SECT. IV.*

### OF THE MUSCLES OF THE LOWER JAW.

THE upper jaw being immoveable, hath no muſcles, but the lower jaw having divers actions, is moved by five pair.

The firſt are called the *temporal muſcles*, becauſe they are ſeated on the temples. They ſpring on each ſide from the bones of the forehead, the ſinciput, the temples, and os cuneiforme, or wedge-like bone, and deſcend under the os jugale, between the perioſteum and pericranium, to the acute proceſs of the lower jaw, into which they are inſerted. Theſe muſcles pull up the lower jaw, and ſhut the mouth.

The ſecond pair ariſe from the ſtyloid proceſs of the temporal bone, fleſhy and round towards their origin, but loſe their fleſhy ſubſtance, and degenerate into a nervous and round tendon as they approach the flexure of the lower jaw-bone; and then becoming fleſhy again, are inſerted into the inner ſide of the lower jaw towards its middle or fore-part; theſe being aſſiſted by the quadrati above deſcribed, pull down the jaw, and ſo open the mouth.

The third pair are called the *maſſeters*, being very aſſiſtant in the office of chewing, by moving the jaw to the right and left ſide; each of theſe hath two beginnings, one from that future where the fourth

and firſt bone of the upper jaw are joined; and the other from the os jugale, and are largely inſerted into the outſides of the lower jaw. Theſe, by reaſon of the diverſity of their fibres, move the jaw divers ways.

The fourth pair are called *pterygoideum externum.* Theſe have a double beginning, as the former, ſpringing partly from the upper and outſide of the wing-like proceſs of the os cuneiforme, or wedge-like bone, and partly from the rough and ſharp line of the ſaid bone; from whence, deſcending downwards, they are inſerted in the inſide of the lateral part of the lower jaw; by which means they move forwards, ſtretching the teeth of the lower jaw farther out than thoſe of the upper.

The laſt pair are called *pterygoideum internum.* Theſe ariſe from the cavity of the wedge-like bone, and are inſerted in the inner and hinder part of the lower jaw. Their uſe is to draw it backwards, contrary to the former, and alſo to aſſiſt the temporal muſcle in drawing it upwards.

## *SECT. V.*

### OF THE MUSCLES OF THE EAR.

THE muſcles of the ears in brutes, eſpecially horſes, aſſes, oxen, and other animals that have large ears, differ much in magnitude from thoſe in man, they being endued with little or no capacity of motion; but that is made up in man by the eaſy motion of the head, by which means he can readily turn

turn himſelf to the hearing of all ſounds; whereas four-footed beaſts wanting that agility, need to have their ears always moveable to receive the ſounds every way, and likewiſe to drive off flies and other inſects that are troubleſome to them, which men can do with their hands.

The outward ear has four muſcles, which are conſiderably larger in brute creatures than in man; and the inward ear has two, which are proportionable in both.

The firſt is called the *attolens aurem*, the lifter up of the ear. It ariſes at the outſide of the frontal muſcle, from whence being carried over the temporal muſcle, it is inſerted in the upper part of the ear, moving it upwards and forwards.

The ſecond is called *detrahens aurem*, or the puller back of the ear. This ariſes from the mammillary proceſs, and is inſerted into the root of the griſtle of the ear.

The third, or *adducens aurem*, by which the ear is drawn forwards, and ſomewhat downwards, is implanted into the lower ſide of the root of the ear, and is only part of the muſculus quadratus before ſpoken of.

The fourth, or *abducens aurem*, becauſe it draws the ear backwards, takes its beginning at the occiput, or back part of the head, whence it is carried tranſverſly to the hinder part of the ear, into which it is inſerted. This muſcle is aſſiſting to the ſecond.

The firſt of the two muſcles of the inner ear, called *externus timpani auris*, or the external muſcle of the drum of the ear, becauſe it moves that membrane upwards and outwards, ariſes from the upper part of the paſſage of the ear, and becoming nar-

rower, it grows into a very fine and ſmall tendon, which runs along the outſide of the drum, and is inſerted into its centre over the hammer, which, along with the drum, it draweth upwards and outwards.

The internus, or inner muſcle, takes its riſe from the bottom of the wedge-like bone, where it joins to the proceſſus petroſus; it lies within the cavity of that bone, and at its middle is divided into two very ſmall tendons, whereof one is inſerted into the upper proceſs of the hammer, and the other into the neck of it. The uſe of this muſcle alone, is to draw the head of the hammer obliquely forwards, and alſo to bring it ſomewhat inwards; but when they act both together, they move the tympanum with its ſmall bones upwards and downwards. This action is performed as often as an animal attentively liſtens to any approaching noiſe.

## *SECT. VI.*

### OF THE MUSCLES OF THE TONGUE, AND OS HYOIDES, WITH THOSE OF THE LARYNX, UVULA, AND THROAT.

THE tongue has five pair of muſcles proper to itſelf, beſides thoſe that are common to it and the os hyoides.

The firſt pair are called the *genioglo ſſum*, becauſe they ariſe from the chin in men, and are inſerted in the tongue. In a horſe they ariſe from the ruggedneſs on the middle of the lower jaw, in the inner and lower part of it; they have ſeveral ſuch inſcriptions

as

as theſe on the ſtreight muſcles of the paunch, and are inſerted into the lower ſide of the middle of the tongue. Their uſe is to move the tongue forwards, which action is frequently performed by horſes when they gather their meat.

The ſecond pair, called *ypſilogloſſum*, becauſe they riſe from the bottom of the os hyoides; they are inſerted in the middle of the tongue, and in their action are contrary to the former, by drawing it backwards.

The *myloglosſum*, or third pair, ariſe from the inner part of the lower jaw, at the roots of the fartheſt grinding teeth, and are inſerted into the ligament which ties the tongue to the jaws. When theſe act together, they draw the tongue downwards, but when they act ſeparately, they draw it obliquely to one ſide.

The fourth pair, called *ceratogloſſum*, becauſe they ariſe from the horns of the *os hyoides*, from which, reaching to the ſides of the tongue, they are there inſerted. Their action is much the ſame with that of the third pair.

The laſt pair are called *ſtylogloſſum*, becauſe they ariſe from the ſtyloides, or pen-like proceſs of the temple-bone. They are inſerted into the ſides of the tongue about its middle. When theſe act ſingly, they draw the tongue to one ſide, but when conjunctly, they pull it upwards and inwards.

The fork-like bone of the tongue, called the *os hyoides*, hath four pair of muſcles, which are common to it and the tongue.

The firſt pair is called *ſternohyoideum*, becauſe they ſpring from the inſide of the upper part of the ſternum

num or breaſt-bone, and taking their courſe cloſe by the wind-pipe, are inſerted into the root of the os hyoides, which they move downward and backward.

The geniohyoideum is oppoſite to the former, ariſing from the inſide of the fore-part of the lower jaw, and is inſerted into the middle-part of the bone hyoides, which draws it ſtreight upwards, and a little forwards.

The third pair, called the *caracohoideum*, ariſe out of the *proceſſus carocoides*, at the upper end of the ſhoulder-blade, and run obliquely upwards under the firſt pair of muſcles of the head, and are at length inſerted into the horns of the hyoids. Their uſe is to pull that bone obliquely downwards.

The fourth and laſt pair, called the *ſtyloceratohyoideum*, ariſe from the ſtyloid proceſs, and alſo end in the horns of the os hyoides; they move that bone obliquely upwards.

As the muſcles of the cheeks and tongue ſerve to toſs the meat to and again in the mouth, and thoſe of the lower jaw help to grind it; ſo theſe muſcles, which are common to the tongue and os hyoides, are principally of uſe to give the tongue ſuch motions as forward it into the gullet, when it is ſufficiently prepared to go into the ſtomach.

The larynx, or upper part of the wind-pipe, has ſix pair of muſcles, and one ſingle one. The firſt two pair being common to it, and all the reſt proper.

The firſt of the common pair is called the *ſternothyreoideum*, and by ſome *bronchium*, or the weaſand muſ-

muſcles. Theſe ariſe from the upper and inner part of the breaſt-bone, aſcending by the ſides of the wind-pipe to the ſhield-like griſtle, where they are inſerted. Their uſe is to draw down the ſaid griſtle, and ſo to widen the chink.

The ſecond pair, called *hyothyreoideum*, ariſe from the lower ſide of the os hyoides, and are inſerted into the thereoid griſtle. Theſe are ſaid to ſtreighten the chink of the larynx, though ſome affirm they widen it, and that the other pair contract it.

The firſt pair of the proper muſcles of the larynx, called *cricothyreoideum anticum*, becauſe they take their beginning from the ring-faſhioned griſtle cricoides, and are implanted in the ſides of the thereoides, which they move obliquely downwards, thereby opening the chink of the larynx.

The next pair, called *cricoarytænoideum poſticum*, ariſe contrary to the former, from the lower and back part of the ring-faſhioned griſtle, and are inſerted in the lower end of the ewer-like griſtle, whereby they raiſe it upward and backward to open and widen the larynx.

The third or lateral pair, ariſing from the ſides of the ring-faſhioned cartilage, terminate in the ſides of the ewer-like griſtle, opening alſo the larynx, by drawing the griſtles obliquely to one ſide.

The fourth pair are the largeſt and ſtrongeſt of all the proper muſcles of the larynx, and ariſe cloſe one to another from the middle of the hollow part of the ſhield-like griſtle, filling that cavity through its whole length, and are inſerted into the two ſides of the ewer-like griſtle, aſſiſting the former.

The

The fifth and laſt, called *arytænoides*, or *claudens ſecundum*, take their riſe from the hinder line of the ewer-like griſtle arytænoides, and is implanted in the ſides of the ſame. This ſingle muſcle helps to ſtreighten the throttle, by drawing both ſides of the ewer-like griſtle together.

The epiglottis, or throat-flap, which covers the chink of the larynx, has no very diſtinct muſcles, but in thoſe creatures that chew the cud, and ſhall therefore be omitted in this place.

The uvula is ſaid to have two muſcles to hold it up, which have alſo very hard and long names beſtowed on them, but they are ſo inconſiderable, that they are hardly worth notice.

The pharynx, which is the upper part of the gullet, has belonging to it three pair of muſcles, and a ſingle one, beſides two pair of a later diſcovery. The firſt pair are called the *ſphenopharingæum*, which ariſe from the appendage of the wedge-like bone, and are inſerted into the lateral parts of the palate and pharynx, which they widen in ſwallowing.

The next pair are called *cephalopharingæum*, ſpringing from that part of the head which joins to the firſt vertebra of the neck, and are implanted on the outſide of the pharynx, ſtreightening it by their action, as ſoon as the food has paſſed through it, thereby alſo forcing it down the gullet.

The third pair, called *ſtylopharingæum*, ariſe from the ſtyloid proceſs of the temporal bone, and are inſerted into the ſides of the pharynx, which they dilate and widen.

The ſingle one, which has the name of *æſophagiæus*, encompaſſeth the upper part of the gullet, form-

forming its ſphinctre, and ſerving for the ſame uſe as thoſe of the arms and bladder, drawing and cloſing up the mouth of the gullet, as thoſe do the extremities of the bladder and ſtreight gut.

The laſt two pair, firſt diſcovered by Dr. Browne, were by him called *pterygopalatini* and *ſphenopalatini*. The uſe of the firſt pair being to depreſs the glandula palati, and that of the ſecond to elevate and lift it up.

## *SECT. VII.*

### OF THE MUSCLES OF THE HEAD AND NECK.

THERE are four pair of muſcles common to the head and neck, and eight pair proper to the head only.

The maſtoideum, which modern anatomiſts reckon the firſt proper pair, have each a double beginning, one from the breaſt-bone, nervous, and the other from the collar-bone, which is fleſhy; from whence they aſcend obliquely to the mammillary proceſſes of the temporal bone, into which each is inſerted. When theſe act together, they bend the head forward; but, when ſeparately, they draw it a little to one ſide.

The ſplenium are reckoned the ſecond pair, being the firſt of thoſe which pull back the head; they ariſe from the five uppermoſt vertebræ of the cheſt, and the five lowermoſt of the neck, with a nervous beginning, aſcending to the hinder part of the head,

where they are inſerted. When theſe act together, they draw the head backward, but when they act ſingly, they draw it a little to one ſide.

The third pair, named *complexum*, or *trigeminum*, becauſe each of them ariſes with three heads; two from the firſt, ſecond, fourth, and fifth tranſverſe proceſſes of the cheſt, and the third from the ridge of the ſeventh vertebra of the neck; all which uniting together, are inſerted into the noll-bone.

The third puller-back of the head, or fourth pair, called *parvum craſſum*. Theſe are ſituated under the former, ariſing nervous from the tranſverſe proceſſes of the ſix uppermoſt vertebræ of the neck, but afterwards, becoming fleſhy, are carried obliquely upward, and are inſerted into the hindermoſt root of the proceſſus mammillaris. When theſe act ſingly, they incline the head lightly backward to one ſide, but when they act together, they bring it ſtreight backward.

The rectum majus, and rectum minus, which make up the fifth and ſixth pair, are ſeated one under the other, and are both inſerted into the noll, aſſiſting the fourth pair in their action.

The obliquum ſuperius, which is accounted the ſeventh pair, ariſe from the middle of the occiput, and are inſerted into the lips of the tranſverſe proceſſes of the firſt vertebra of the neck; their uſe being to nod the head backward.

The laſt pair, called *obliquum inferius*, take their origin from the ſpine or ridge of the ſecond vertebra of the neck, and forming an oblique courſe, terminate in the tranſverſe proceſſes of the firſt vertebra, being

being of uſe to move the head ſemicircularly. Now the reaſon why there are ſo many muſcles appointed to move the head backward, is becauſe of its great bulk and weight; by which means it is of itſelf prone enough to incline forward and downward, ſo that it wants not only a ſtay, but requireth a greater force to move it upward or backward.

The muſcles common to the head and neck, are in number four pair, as has been obſerved.

The firſt called *ſpinatum*, becauſe they are ſeated among the ſpines of the vertebræ, take their riſe from the root of the ſpines of the ſeven uppermoſt vertebræ of the cheſt, and five lowermoſt of the neck, and are inſerted into the whole lower ſide of the ſpine of the ſecond vertebra of the neck. Their office is to bend the neck backward, or a little obliquely.

The next pair is called *tranſverſale*, becauſe they both ariſe, and are inſerted into the tranſverſe proceſſes of the vertebræ, ariſing from thoſe of the uppermoſt vertebræ of the cheſt; and being inſerted into the outſides of all the tranſverſe proceſſes of the neck-bones. Their uſe is the ſame with the firſt pair.

The third pair, called *longum*, lie hid under the gullet, ariſing from the body of the fifth and ſixth vertebræ of the back, and reaching the higheſt vertebra of the neck, into which they are inſerted. Their uſe is contrary to the firſt two pair, bending the neck forward when they act together, and when they act ſingly, to one ſide.

The laſt pair is called *triangulare*. Theſe are ſeated forward on the ſides of the neck, having ſome perforations, by which veins, arteries, and nerves, paſs out of the body into the fore-legs.

## *SECT. VIII.*

### OF THE MUSCLES OF THE BREAST.

HAVING briefly run over the muſcles which ſerve to move the head and neck, we come now to thoſe of the breaſt, which actuate the cheſt, whereof four pair widen and dilate it, and two pair contract it.

The firſt of thoſe which ſerve to widen the breaſt, are called *ſubclavium*, from their ſituation under the clavicle, or collar-bone. Theſe ariſe from under that bone, and are implanted into the firſt rib near the breaſt-bone, drawing the firſt rib upward and outward.

The ſecond pair, called *ſerratum majus anticum* (from the reſemblance their tendons have to the teeth of a ſaw) ariſe from the inſide of the ſhoulder-blade, and the two upper ribs, and are inſerted into the lower five true ribs, and two upper ſhort ribs, ſo that their breadth takes up a great part of the ſide of the cheſt. Theſe co-operate with the firſt pair in widening the cheſt, as do alſo the two following pair, viz. the ſerratum poſticum ſuperius, riſing from the ſpines of the three lower rack-bones of the neck, and firſt of the back, and being inſerted into

into the interſtices of the upper ribs; and the par ſerratum poſticum inferius, taking its origin from the ſpines of the three lowermoſt vertebræ of the back, and firſt of the loins, and having their inſertions into three or four lower ribs, before they turn cartilaginous.

Theſe four pair, together with the midriff, and the widening intercoſtal muſcles, dilate the cheſt in inſpiration; that is to ſay, in drawing in the breath; and the two following pair, viz. the triangulare and ſacrolumbum, with the internal and intercoſtals, depreſs the cheſt in expiration or letting-forth the breath. The triangular pair having their riſe from the middle line of the breaſt bone, on its inſide, and their inſertion into the bony ends of the third, fourth, fifth, and ſixth true ribs; and the other pair taking their origin from the os ſacrum and ſpine of the loins, and having their inſertion into the lower ſide of all the ribs, about three or four fingers breadth from the ridge of the back.

## *SECT. IX.*

### OF THE MUSCLES OF THE BACK AND LOINS, WITH THOSE OF THE FUNDAMENT AND BLADDER.

THE muſcles of the back and loins are uſually reckoned four pair, which are common to both.

The firſt go by the name of *longiſſimi*, from their extraordinary length, being the longeſt of the whole body,

body, and endued with moſt ſtrength. They ariſe from the os ſacrum and haunch-bone, and paſſing by the ridge of the loins, back, and neck, they reach to the mammillary proceſſes of the temple-bones; they are almoſt confounded with the par ſacrolumbum and the ſemiſpinatum, in their paſſage through the loins, but arriving towards the back, they again part with them, and appear to be diſtinct from them. When both act together, they extend the back and loins, but when they act ſingly, they incline the ſpine to one ſide. They are of farther uſe to moſt creatures, but eſpecially to beaſts of burden, being a bar and ſtay to the whole back.

The *par quadratum*, or ſecond pair, ſo called from their figure, being ſquare when joined together, though triangular when ſeparate. They ariſe broad, thick and fleſhy, from the backward and upper cavity of the haunch-bone, and from the inner and upper ſide of the os ſacrum, and are inſerted into all the tranſverſe proceſſes of the vertebræ of the loins. Their uſe is to bend the racks of the loins with a right motion forward or downward, but when one only acts, it draws the loins to one ſide ſomewhat downward.

The third pair, ariſing from the os ſacrum, are therefore called *par ſacrum*; they ſpring from that part of the ſaid bone where the ſpine is faſtened, ending in the ſpine of the loweſt vertebra of the thorax; but at the ſame time having in their paſſage ſeveral inſertions into divers of the ſpines and oblique proceſſes of the vertebræ of the loins. If theſe act ſeparately, they pull the body a little on one ſide; but

but when both act together, they extend that part of the spine to which they are fastened.

The last pair, called *semispinatum*, arise with a nervous original from all the spines or ridges of the os sacrum and loins, and are inserted into the transverse processes of the loins, and some of the lowermost of the chest. When all these muscles of the back and loins work together, the whole back is extended; but if the muscles of that side alone, the body is then inclined to that side.

The anus hath three muscles, two called the *levators*, and one named its *sphincter*.

The sphincter is seated at the extremity of the streight gut, encompassing it all round like a ring. It is attached to the lower vertebræ of the os sacrum, composed of circular fibres, being of use to contract the orifice of that gut, as has been observed in another place.

The two levators, or lifters-up of the fundament, are small, broad, and nervous, arising from the ligaments of the hip-bones and os sacrum, from whence, passing by the sides of the gut, they adhere to it, and are inserted into the upper part of the sphincter; a portion of them also growing to the root of the yard, and in mares to the neck of the matrix. Their use is to assist the muscles of the lower belly in the expulsion of the excrements, which they do by lifting up the fundament.

The bladder has also its sphincter, which is composed of circular fibres, as that of the anus; and in like manner serves to constringe or draw up its neck, that the urine may not pass out without a

spontaneous

ſpontaneous relaxing of that muſcle. In mares it is ſeated at the orifice where the neck of the bladder opens into the vagina.

Having already taken notice of the muſcles belonging to the yard, called its *erectors* and *dilaters*, and the cremaſter muſcles, by which the ſtones are ſuſpended, as alſo thoſe of the clitoris in mares, we ſhall therefore paſs them by in this place, and proceed to the ſhoulder-blade, &c.

## *SECT. X.*

### OF THE MUSCLES OF THE SHOULDER-BLADE AND SHOULDER, WITH THOSE WHICH MOVE THE FORE-LEG AND FOOT.

THE ſhoulder-blade has four pair of muſcles, agreeable to its four ſeveral motions.

The firſt pair, called *cucullares*, from the reſemblance they bear to a monk's hood, are ſeated between the two ſhoulder-blades, covering the top of the withers. Theſe ariſe thin and fleſhy from the hind part of the head, but as they paſs down the neck, have other membranous beginnings from five of its ſpines, and from eight or nine of the uppermoſt of the cheſt, and are inſerted into the whole ſpine of the ſhoulder-blade, as alſo into the ſhoulder-bone, and broader part of the collar-bone. When the upper part of this muſcle is contracted, then the ſhoulder-blade is thought to be moved ſomewhat obliquely upward, becauſe of the oblique direction of

of its fibres; but when that part which ſprings from the withers is contracted, it is then pulled ſtreight thitherward.

The ſecond pair are called *levatores*, or lifters. They are ſituated above the collar-bone, ariſing from the tranſverſe proceſſes of the firſt four vertebræ of the neck, and are inſerted into the fore corner of the ſhoulder-blades; theſe draw the blades upward and forward.

The third pair, named *ſerratum minus anticum*, lie under the pectoral muſcles, and ſpring from the four uppermoſt ribs, before they turn griſtly, by four fleſhy portions repreſenting the teeth of a ſaw, and are inſerted into the anchor-like proceſs of the ſhoulder-blade. Theſe move the ſhoulder-blades forward toward the cheſt.

The laſt pair, called *rhomboides*, are ſeated under the cucullares, and take their origin from the hinder proceſſes of the three lowermoſt ſpines of the rack-bones of the neck, and from the three uppermoſt of the cheſt, and are implanted into the baſis of the ſhoulder-blades, their uſe being to draw them ſomewhat upward and backward.

The ſhoulder has five ſeveral motions performed by nine muſcles, viz. backward, forward, upward, downward, and circularly.

But before we proceed to a deſcription of its muſcles, it will be proper to intimate, that although the ſhoulder-blades in horſes are generally taken for part of the ſhoulder, yet anatomiſts have always diſtinguiſhed between the ſhoulder-blade and ſhoulder, accounting that part only to be the ſhoulder, which

is joined to the ſhoulder-blade, and reaches toward the elbow.

The firſt of its muſcles is called *deltoides*, from its figure reſembling the Greek letter Δ. It ariſes fleſhy from the midſt of the collar-bone, the top of the ſhoulder, and the whole ridge of the ſhoulder-blade, and is inſerted in the middle of the ſhoulder-bone. This muſcle not only raiſes up the ſhoulder, which is its chief and principal uſe, but by the various directions of its fibres, it aſſiſts in other motions, but eſpecially in that which is circular.

The ſecond erector of the ſhoulder is named *ſupraſpinatus*, becauſe it fills all that cavity which is between its ſpine and upper edge. It ariſes from the ſpine of the blade, with a long and fleſhy beginning, and is inſerted into the neck of the ſhoulder-bone by a ſtrong and broad tendon.

The *latiſſimus* and *rotundus major*, are the two depreſſors of the ſhoulder; the firſt is ſo called from its breadth; for, with its fellow, it almoſt covers the whole back. It riſes from the tops of all the ſpines of the rack-bones that are between the ſixth vertebra of the cheſt, and the middle of the os ſacrum, as alſo from the upper part of the haunch-bone, and is inſerted below the upper head of the ſhoulder-bone length-ways.

The ſecond depreſſor, which is the fourth muſcle of the ſhoulder, called *rotundus major*, takes its origin from the lower coſta of the ſhoulder-blade, and is inſerted into the upper and inner part of the ſhoulder-bone. The uſe of this, and the laſt deſcribed, is to pull the ſhoulder downward.

The

The two pair of muſcles which bring the ſhoulder forward, are called, the one by the name of *pectoralis*, and the other *coracoideus*. The pectoralis is ſo called from its ſituation on the fore-ſide of the breaſt. It ariſes from the middle of the collar-bone; its middle proceeds from the whole length of the breaſt-bone, and the ends of the griſtles of all thoſe ribs which terminate in it; and its lower part ſprings from the ſixth, ſeventh, and eighth ribs. Its inſertion is with a broad and ſinewy tendon into the ſhoulder-bone, a little below its head.

The coracoideus has its beginning from the proceſſus coracoides, from whence it reaches to the middle of the ſhoulder-bone, where it terminates. The uſe of this, and the former, is to draw the ſhoulder forward.

The following three muſcles, viz. the infraſpinatus, ſubſcapularis, and rotundus minor, move the ſhoulder backward.

The infraſpinatus ariſes from the baſis of the blade below its ridge, and is inſerted, by a broad and ſhort tendon, into the fourth ligament of the ſhoulder-bone.

The ſubſcapularis is ſeated between the ſcapula and ribs, and is inſerted into one of the ligaments of the ſhoulder; and the rotundus minor, which ariſes from the loweſt corner of the ſcapula, is implanted into the neck of the ſhoulder-bone.

As to the circular motion of the ſhoulder, that is not performed by any ſingle muſcle, but by ſeveral of theſe already named acting ſucceſſively one after another, which is eaſily enough to be conceived by thoſe who carefully obſerve their origins and in-

ſertions, and the various directions of their fibres. But we ſhall now proceed to thoſe that move the fore-leg and foot.

The fore-leg is bended by two muſcles, viz. the biceps and brachiæus internus.

The *biceps*, ſo called from its double head, or beginning, ariſing partly from the upper brim of the ſhoulder-blade, and partly from the anchor-like proceſs of the ſame bone. This muſcle becometh ſtrong and fleſhy, and runs all along the inſide of the cubit-bone to the knee, where it is inſerted. Its office is to bend the cubit forward, and ſomewhat inward.

The ſecond, or *brachiæus internus*, ſo called in man, from its ſituation on the inſide of the arm, and may properly enough retain the ſame name in a horſe. This takes its beginning near the inſertion of the deltoides, after which it runs its courſe as the former, and is inſerted into the fore-ſide of the cubit-bone, a little above the knee, and is aſſiſting to the former.

Two muſcles alſo extend the cubit, and theſe are ſeated on its hind part; the firſt is called *longus*. It takes its origin from the lower rib of the blade-bone, and deſcending along the hinder part of the ſhoulder-bone, is inſerted into the outſide of the cubit-bone, toward the knee. This draws the leg backward, and ſomewhat outward, and thereby ſtretches it out ſtreight.

The ſecond is called *brevis*, from its ſhortneſs; it ariſes from the hinder part of the neck of the ſhoulder-bone, and holding the ſame courſe with the

the firſt, it is inſerted alſo with it, and aſſiſts it in its motion.

There are beſides theſe, two other muſcles, which give their aſſiſtance in extending the cubit, viz. the brachiæus externus, and anconæus; but Spigelius, and others, have thought the one to be only part of the longus, and the other a part of the ſhort muſcle, and therefore have left them out.

Theſe are all the muſcles that move the fore-leg of a horſe, falling ſomewhat ſhort of the number of thoſe which move the arm of a man, by reaſon a horſe has only one ſingle bone in that part, whereas there are two in the arm of a man, viz. the cubit and ulna, which ſerve to turn the arm and hand round; which kind of motion is not neceſſary for a quadruped.

The ſhank, which ſomewhat anſwers to the metacarp in a man, has the ſame number of muſcles with the fore-leg, viz. two extenſors, and two flexors.

The firſt of the flexors, or benders, is called *cubitæus internus*; it ariſes from the inner knob of the ſhoulder-bone, and is implanted into the inner and hinder ſides of the top of the ſhank. The ſecond may be called the *cubitæi interni ſocius*, or *auxiliarius*, as having the ſame riſe, progreſs, and inſertion, with the other.

The extenders of the ſhank are the cubitæus externus, and its fellow, which take their origin from the outer knob of the ſhoulder-bone, and are inſerted into the outer and fore-ſide of the head of the ſhank.

The

The next joint is the great paſtern, anſwering to the firſt joint of the finger in a man's hand, as the little paſtern does to the ſecond, and the coffin joint to that on which the nail grows; all which are bended and extended as the former.

The firſt bender of the paſterns and coffin-joint is called *ſublimis*; it ſprings from the inner knob of the ſhoulder-bone, and is inſerted into the paſterns.

The ſecond is named *profundus*, ariſing from the upper part of the cubit-bone, and bending its courſe down to the coffin-joint, into which it is inſerted.

They are extended by one conſiderable muſcle, called *extenſor magnus*. This ſprings from the outer knob of the ſhoulder-bone, and is inſerted into the fore and outer parts of the paſtern and coffin-joint.

Laſtly, the muſcle which anſwers to that called *palmaris* in a man; it ariſes fleſhy from the inner knob of the ſhoulder-bone, but preſently grows into a ſlender tendon, which deſcends to the ſole of the foot.

## TABLE I.

*Repreſents a Horſe ſtanding with his Face towards us, that any Perſon may have a full View of all the Muſcles that appear on his Fore-Parts.*

1. Repreſents the par maſtoideum.
2. The muſcles of the ſcapula, or ſhoulder-blade.
3. The par trigeminum, or complexum.
4. The par triangulare, or ſcalenum.
5. The wind-pipe in its natural ſituation.
6. The par longum, removed from under the gullet.
7. The pair of the noſe, called philtrum.
8. The cloſing muſcles of the noſtrils.
9. The muſcles of the eye-lids.
10. The temporal muſcles.
11. The muſcles of the ear.
12. The frontal, or forehead muſcles.
13. The cucullaris, or monk's hood.
14. The deltoides of the ſhoulder.
15. The ſerratus major anticus, ſhrunk up.
16. The pectorals.
17. The deltoides of the thigh.
18. The ſerratus poſticus.
19. The external intercoſtal muſcles.
20, 21, 22. The three buttock muſcles.

SECT.

## SECT. XI.

### OF THE MUSCLES OF THE THIGH, AND THOSE WHICH MOVE THE HIND-LEG AND FOOT.

THE thigh of a horſe comprehends that part which is between the joint of the huckle, or whirl-bone, and the ſtifle.

It is moved by ſeveral muſcles, the firſt of which are called the *benders* of the *thigh*, and are in number three, viz. the pſoas, the iliacus internus, and pectineus.

The firſt of theſe ariſes fleſhy from the tranſverſe proceſſes of the two lowermoſt vertebræ of the cheſt, and two or three uppermoſt of the loins, from whence, deſcending by the inſide of the os ilium, it ends in a ſtrong round tendon, which is inſerted into the fore-ſide of the upper part of the leſſer head of the thigh bone. The uſe of this muſcle is to draw the thigh upward, and ſomewhat inward.

The ſecond, or iliacus internus, ſpringeth with a ſlender fleſhy beginning from the inſide of the haunch-bone; and being joined by its tendon to the former muſcle, is inſerted by a round tendon into the leſſer head, or rotator, of the thigh bone. This muſcle is alſo of uſe to raiſe the thigh upward, though not ſo much inward as the other.

The pectineus, which is the laſt of theſe three muſcles, ariſes broad and fleſhy from the line of the ſhare-bone, near the griſtle, and is implanted with a broad and large tendon into the lower end of the thigh-bone. This draws the thigh upward and inward,

ward, and is that muſcle, which, in men, helps to lay one thigh over the other.

This muſcle, and all thoſe that follow, except the two laſt, are inſerted into the lower end of the thigh bone, juſt above the ſtifle; whereas in men, they are moſt, or all of them, inſerted into its upper part, either at its neck, or into one or other of the two knobs at the lower end of its neck, called the great and leſſer *trochanters*.

Anatomiſts think the reaſon of this difference is owing to the ſhortneſs of the thigh-bone of a horſe, compared with that of a man, whereby his muſcles being very plump and bulky upon his buttocks, it was neceſſary they ſhould have ſome ſpace to grow more ſlender, and become tendinous; and therefore we find they are extended as far as the ſtifle, which anſwers to the knee in man. But this is alſo owing to the different action of the thigh of a horſe from that of a man, which manifeſtly requires its muſcles to have a lower inſertion.

As there are three muſcles which bend the thigh forward, it has the ſame number to bend it backward.

The firſt is called *glutæus externus*, or the moſt outward buttock-muſcle; it riſes with a fleſhy beginning from the crupper, the ridge of the haunch-bone, and from the os ſacrum, and paſſing over the joint of the huckle-bone, it ends in a ſtrong and broad tendon, which is inſerted above the ſtifle into the inner part of the thigh-bone. Its uſe is to extend the thigh, and enable a horſe to go backward.

The next is called the *glutæus medius*, lying in man directly under the other; but in a horſe, ſide by ſide

with the other. It riſes from the ſpine of the haunch-bone, a little higher than the other, and from thence deſcends obliquely over the joint of the hip, and is inſerted into the lower end of the outer ſide of the thigh-bone. Its uſe is to extend the thigh, and to draw it outward and backward, as when a horſe ſtands to ſtale.

The third and laſt of the extenders is called *glutæus minor*, or leſſer buttock-muſcle; it riſes round and fleſhy as high as the former, and deſcending obliquely over the joint of the hip to the lower end of the thigh-bone, is inſerted ſomewhat towards its fore-ſide. This aſſiſts the other in its action.

The thigh is moved inward by the triceps; or, according to ſome, the quadriceps, from its having four heads; the firſt head riſing nervous from the upper part of the ſhare-bone, and deſcending to the inſide of the lower end of the thigh-bone. The ſecond beginning fleſhy at the lower ſide of the ſame bone, and ending a little higher than the former. The third ariſing partly nervous and partly fleſhy, from the under ſide of the coxendix, is inſerted near the laſt. The fourth, having a like origin from the tip of the coxendix, runs along the inſide of the thigh, and ends in a round tendon, which joining with the tendon of the firſt part of this muſcle, has the ſame inſertion with it.

The thigh is alſo turned outward by four ſmall muſcles, called *quadrigemini*, all which are placed one by another, upon the outſide of the articulation of the thigh. The firſt is the longeſt, and takes its origin from the lower and outer part of os ſacrum; afterwards, paſſing over the great rotator, it is in-

ſerted

ſerted into the outſide of the lower end of the thigh-bone.

The ſecond and third ariſe both of them from the knob of the os iſchium, near each other, and are inſerted with the firſt.

The fourth is more fleſhy than the reſt, ariſing from the inner part of the knob of the iſchium, and terminating with the former. To theſe muſt be added the deltoides of the thigh, which ſprings from the outſide of the tip of the ilium, with a ſharp beginning, but growing triangular, is inſerted with a broad membranous tendon into the outſide of the thigh-bone; by its ſituation it ſeems to aſſiſt the action of the quadrigemini.

But laſtly, the thigh is turned obliquely by two muſcles, called *obturatores*, or *ſtopers*. The firſt is called obturator internus, and takes its origin from the inner circumference of the hole above-mentioned, and is inſerted into the cavity of the great rotator. The obturator externus, from the external circumference of the ſaid hole, and is inſerted into the ſame cavity with the former.

The leg has three ſeveral motions peculiar to it, viz. it is bended, extended, and turned obliquely outward; to perform all which motions, there are the ſame number of muſcles in horſes as in man only that ſome of them are different from thoſe in men with reſpect to their inſertions.

It has firſt of all five muſcles, called *extenders*, of which the firſt is named membranoſus; and by ſome the faſcia lata, becauſe it involves and covers almoſt all the muſcles of the thigh. This muſcle riſes fleſhy from the upper part of the os ilium, near the

great proceſs of the thigh-bone; and covering the whole thigh and the ſtifle, over which it croſſes, it is at laſt inſerted into the fore and upper part of the leg. Its uſe is to extend the leg directly; or, according to ſome, to draw it obliquely outward.

The ſecond is called *longus*, ariſing from the upper part of the appendix of the os ilium; and paſſing obliquely down the thigh, it is inſerted into the bone of the leg, a little below the ſtifle. This muſcle not only extends the leg, but helps to draw it inward; for which reaſon ſome authors reckon it one of the benders of the leg.

The third is called *rectus*, from its ſtreight courſe. It takes its beginning from the lower brim of the haunch-bone, and deſcends ſtreight down the fore-ſide of the thigh, until it reaches the ſtifle, where it turns into a ſtrong and broad tendon; and adhering to the patella, in its paſſage over it, it is at laſt inſerted into the fore-ſide of the upper part of the ſhank.

The fourth is named *vaſtus externus*, becauſe of its great bulk; it riſes from the root of the great trochanter, and from the neck of the thigh-bone, cleaving cloſe to its outſide, until it arrives at the ſtifle, where, becoming membranous and broad, and uniting with the tendon of the ſtreight muſcle, it is inſerted into the ſame place with it, but on its outſide.

The laſt, or vaſtus internus, riſes from the root of the leſſer trochanter, and deſcending down the inſide of the thigh-bone, it unites itſelf with the former two, after it has paſſed over the ſtifle, and is inſerted with them into the ſame place of the tibia. Theſe three

three laſt-deſcribed muſcles joining together at their croſſing the ſtifle, form one broad and ſtrong tendon, which involves the patella, or knee-bone of the ſtifle, and tying it ſo firmly that it is almoſt impoſſible for it to be diſplaced.

The benders of the leg are in number four, viz. the biceps, the ſemimembranoſus, the ſeminervoſus, and gracilis.

The biceps riſes ſharp and nervous from the appendage of the coxendix, and paſſing along the outſide of the thigh, is inſerted into the outſide of the appendix of the tibia, or leg-bone. This bends the leg by pulling it backward.

The next is the ſemimembranoſus, which takes its beginning from the knob of the coxendix, as the other, and running down the back part of the thigh, is inſerted into that part of the leg-bone, which in man is called the ham.

The third is called *ſeminervoſus*, being partly nervous and partly fleſhy, as the other is partly fleſhy and partly membranous. It has the ſame origin with the other two; but deſcending obliquely towards the inner part of the thigh, it reaches to the middle of the leg-bone, into whoſe inner part it is inſerted.

The fourth is called *gracilis*, being ſlender; it ariſes with a nervous beginning, from the middle of the ſhare-bone, and deſcending along the inſide of the thigh, is inſerted near the other. When theſe muſcles act together, they draw the leg directly backward; but when they act ſingly, ſome being placed more outward, and ſome more inward, they then bend the leg either to this or that ſide.

But

But beſides theſe, there is another called *poplitæus*, which moves the leg obliquely. This riſes broad and nervous from the outer head of the thigh-bone, and going obliquely down the thigh, is inſerted in the back part of the upper knob of the tibia.

We come now to the muſcles which move the lower part of the leg and foot; and here it will be neceſſary to take notice, that by the lower part of the leg, is to be underſtood that ſpace which reaches from the hock to the great paſtern, which we find to be anſwerable to the inſtep in men, as the great and little paſtern anſwer to the firſt and ſecond joints of the toes; and the coffin-joint to that whereon the nails grow.

The inſtep is bended by two muſcles, viz. the *tibæus anticus*, and *peronæus anticus*. The firſt ariſes ſharp and fleſhy from the upper appendix of the leg-bone, cleaving cloſe to its deſcent, and paſſing under the griſtle of the hock, is divided into two or more tendons, that are inſerted into the fore ſide of the inſtep-bone, which, with the reſt of the foot, it moves forward and upward.

The ſecond is called *peronæus anticus*, though improperly in a horſe, who wants that bone which in a man is named *perone* or *fibula*. This takes its origin from the upper appendix of the tibia, or leg-bone, and is inſerted into the outſide of the inſtep-bone, which, with the reſt of the foot, it moves forward, and ſomewhat outward.

The foot is alſo extended or drawn backward by three muſcles, the firſt is called *gaſtrocnemius externus*; and is that muſcle, which, in man, forms the calf of the leg. It takes its riſe from the inner head of the

the thigh-bone, and part of it from the outward head of the ſame bone, and afterwards uniting together about the middle of the leg, they there turn into one ſtrong tendon, which being united with that of the following muſcle, viz. the *gaſtrocnemius internus*, are both inſerted into the heel-bone.

This muſcle lieth ſomewhat under the former, ariſing from the hinder part of the upper end of the leg-bone, and is inſerted as aforeſaid.

The laſt extender of the foot is called *plantaris*, or the muſcle of the ſole or tread; it ariſes fleſhy, round, and ſlender between the former two, taking its origin from the back part of the lower head of the thigh-bone, and, in its deſcent, ſoon becomes a ſlender round tendon, which, joining very cloſely with the tendons of the former two, paſſes down to the heel-bone, where it leaves them, and proceeds along the back part of the inſtep-bone, and the two paſterns, terminating within the foot all over the bottom of it, making that part of the foot which lies next under the ſole, and plainly appears when the ſole is drawn out. The tendons of theſe three muſcles joining together, form the great ſinew called *magna chorda*, by which the butchers hang up their meat.

The foot is alſo moved ſomewhat ſideways, viz. inward and outward, by two muſcles.

The firſt is called *tibialis poſticus*, having its origin from the upper end of the leg-bone, and its inſertion into the ſole of the foot, its uſe being to move the foot obliquely inward.

The ſecond, called *paronæus poſticus*, ariſes from the upper and hinder part of the leg-bone, by a nervous and ſtrong beginning, and deſcending with the tendon

don of the peronæus anticus, on the outſide of the hock, continuing its courſe beyond it to the bottom of the foot, into which it is implanted. This moves the foot contrary to the former, viz. obliquely outward.

The paſterns and coffin-joint are likewiſe bended and extended by their proper muſcles.

The benders are in number two, viz. the flexor longus, and flexor brevis. The firſt ariſes from the upper and hinder part of the leg-bone, and deſcends on the inner ſide of the hoof, down the inſtep-bone and paſterns, into the coffin-joint. The ſecond takes its origin from the inſide of the heel-bone, a little below the hock, and has the ſame inſertion with the former, Theſe bend the paſterns and coffin-joint backward.

The extenders are alſo two, the firſt called *extenſor longus*, and the other *extenſor brevis*; the one riſing from the inner ſide of the ſhank, juſt under the ſtifle, is inſerted into the fore and upper part of the coffin-joint. The other riſing from the fore part of the annular ligament, that binds about the inſtep-joint, and deſcending under the former, has the ſame inſertion. Theſe two extend the paſterns and coffin-joint, by drawing them forward.

TABLE

*A Representation of the Hind View of an Horse. with the Muscles. (see Table II)*

## TABLE II.

*Repreſents the hind Part of a Horſe with his Muſcles.*

A. The cucullaris, or monk's hood.
B. The edge of the deltoides of the thigh.
C. The glutæus minor, or leſſer buttock-muſcle.
D. The glutæus medius.
E. The glutæus major, or greater buttock-muſcle.
F. The biceps.
G. The ſeminervoſus of both legs.
H. The lividus, or pectinalis of both hind-legs.
I. The ſemimembranoſus.
K. The orbicularis, or orbicular muſcle of the lips.
L. Part of the longiſſimus dorſi.
M. The circular muſcle of the noſe.
N. The ſphincter of the fundament.
O. The maſtoides.
P. The manſorius of the cheeks.
Q. The triangularis.
R. The complexus, or trigeminus.
S. The tranſverſalis colli.
T. The ſpinatus colli.
V. The vaſtus externus.
W. The gaſtrocnemius externus.
X. The peronæus anticus.
Y. The peronæus poſticus.

## SECT. XII.

### THE INVESTITURE AND TEGUMENTS OF THE LOWER BELLY.

ALL that cavity which is below the midriff, encompaſſed by the ſhort ribs, is the lower belly, the point of the breaſt-bone, loins, haunch-bone, and ſhare-bone, and is filled with guts, and other entrails.

The proper teguments of the lower belly are the muſcles, and the membrane which lies under them, called the *peritonæum*.

The muſcles are of different ſhapes and figures, according to their ſeveral uſes. Theſe on the lower belly are divided into five pair, the uppermoſt are called the *oblique deſcending* muſcles, and derive their origin from the ſides of the breaſt-bone, the points of ſome of the lowermoſt ribs, where they reſemble the teeth of a ſaw; from the tips of the croſs-proceſſes of the joinings of the rack-bone in the loins, and run ſloping downwards into the white line, which is only a tendinous ſubſtance, formed by the endings of ſuch of thoſe muſcles as meet and are determined in it, and reaches from the point of the ſword-like griſtle of the breaſt-bone, as low as the ſhare-bone, dividing the lower belly in the middle. Theſe two muſcles have their inſertion from below the navel downwards, to the end of that line.

The

The next are the oblique aſcending pair. They riſe from the upper part of the haunch-bone, and from the proceſſes of the vertebræ of the loins and os ſacrum, and taking a contrary courſe to theſe above deſcribed, they are inſerted partly on the ends of the ſhort-ribs, and partly on the white line, from the point of the breaſt-bone down to the navel. Their action is different from the former; for as thoſe draw the lower part of the belly ſideways, toward the breaſt, from whence they ariſe, ſo theſe draw down the cheſt ſomewhat ſloping toward the loins.

The third pair are called the *recti*, or ſtreight muſcles, becauſe their fibres run in a ſtreight line from their origin, at the ſides of the above-mentioned griſtle, and the ends of the baſtard-ribs to the ſhare-bone, where they are inſerted. There are in theſe, ſeveral tendinous interſtices, which are the cauſe why ſome anatomiſts have divided them into divers muſcles. They ſhorten the belly, by drawing the breaſt and ſhare-bone toward each other.

The fourth pair are called the *pyramidal*, from the reſemblance they bear to a pyramid, being broad at bottom, and growing gradully narrower towards the top. They ſeem to be derived from the ſtreight muſcles, and are aſſiſting to them in contracting the belly.

The laſt are the tranſverſe, or croſs muſcles, which have their origin from the lowermoſt baſtard ribs on each ſide, from the tranſverſe proceſſes of the joints, or vertebræ of the loins and haunch-

bones, from whence, running acroſs the belly, they are inſerted in the white line.

Beſides that theſe muſcles are a cover and ſupport to the lower belly, they have not only their particular offices, but act in concert with each other, and give their mutual aſſiſtance in compreſſing the guts to the expulſion of their excrements.

Underneath the muſcles lies the peritonæum, which is the next proper tegument of the guts. It is a double membrane of an oval figure, and is thought to derive its origin from that which involves the pith of the loins; its inſide is very ſmooth, and lined with a ſort of mucus, which proceeds from the guts, over which it is ſpread. From this membrane all the lower parts of the belly are furniſhed, either with their common or proper membranes. It has ligaments, whereby it helps to bind all the guts in their proper ſituation, that no violent motion may diſplace them; it alſo affords a ſtrong ligament to the liver, and is a great ſupport to a vaſt number of ſmall veſſels, which would either be broke or twiſted in ſo long a courſe, were they not preſerved within its duplicature.

The caul ſeems to be a proper invelopment, or cover for the guts, being in moſt animals ſpread all over them; though in a horſe it is often ſeen to lie forward in wrinkles, which may be occaſioned by his violent labour. It is in figure like a purſe-net, being double, and open at top, but knit together towards the bottom: It adheres

adheres to the lower part of the ſtomach, and likewiſe to the ſpleen, and hollow ſides of the liver. By its under-ſide it is faſtened to that part of the gut colon, which lies under the ſtomach lengthways, and likewiſe to the ſweetbread, and beginning of the ſmall guts.

As the caul has plenty of fat, it not only ſerves to keep the bottom of the ſtomach and moſt of the guts moiſt, but alſo to cheriſh them with its warmth. And beſides this, it has likewiſe a farther uſe, viz. to ſuſtain a vaſt number of branches of veſſels which paſs between its membranes to the ſtomach, ſpleen, and guts, &c.

## *SECT. XIII.*

### OF THE GULLET, STOMACH, GUTS, AND MESENTERY.

THOUGH all the gullet is not contained in the lower belly, yet as it is an appendage to the ſtomach, and the funnel through which every thing paſſes into it, a deſcription of it cannot be ſo proper any where elſe, as in this place.

It is hollow and round, beginning at the root of the tongue, behind the head of the wind-pipe, under which it paſſeth, turning a little to the right, to give way to the great artery; afterwards, inclining to the left, it paſſes through the midriff,

midriff, and is inſerted into the ſtomach towards its left ſide.

It conſiſts of three coats or caſes; the outermoſt ſeems to come from the pleura, &c. the middlemoſt is muſcular and thick, conſiſting of two ranks of fleſhy fibres aſcending and deſcending obliquely acroſs one another. The innermoſt is membranous, with ſtreight fibres only; its veins communicate with thoſe on the breaſt and neck, as do alſo its arteries. At its beginning it has two large glands or kernels, which ſeparate a moiſture to keep its inſide glib, to facilitate the paſſage of the food, &c. Where it is inſerted in the ſtomach, it is compoſed of a pretty thick ſubſtance, made up of circular and fleſhy fibres, whereby it contracts and dilates itſelf to give way to the aliment, or ſhut up the ſtomach at pleaſure. This is called the left, or upper orifice of the ſtomach; and that whereby it diſcharges itſelf itſelf into the duodenum, its right or lower orifice.

The ſtomach is round, and ſomewhat long, reſembling a bag-pipe, but more capacious on the left ſide than the right; its magnitude is, generally ſpeaking, more or leſs, according to the ſize of the horſe. It is alſo compoſed of three caſes, the outermoſt of which ſeems to riſe from the peritonæum; the ſecond is muſcular and fleſhy, and the laſt a continuation of the innermoſt coat of the gullet.

It has arteries from the cæliacal branch of the aorta, and veins from the ſplenic and the gaſtrics,

gaſtrics, a vein common to its left ſide and the caul, and one common to the caul and the right ſide from the meſenterics; and laſtly, the pyloria, which comes from the porta.

It has branches from the recurrent nerves, which being exceeding numerous, are the occaſion of its being ſo very ſuſceptible of hunger, and all other ſenſations.

The uſe of the ſtomach is to concoct and digeſt the aliment, ſo as to render it fit for nouriſhment; and this is performed chiefly by its muſcular motion, which is manifeſt from its ſtructure, and the power it has of contracting itſelf into thoſe rugæ, which we diſcover in it when it is empty.

After the ſtomach proceed the guts, which, according to computation, are in number ſix, viz. the ſmall gut, the cæcum, or blind gut, the three colons, and the ſtreight gut.

The ſmall gut (which in a man is divided into three, viz. the duodenum, jejunum, and ilion, from its ſeveral circumvolutions) is, in a horſe, reckoned to be about twenty-ſix yards in length; and is, in all its turnings, faſtened to the meſentery. The ſtomach empties its aliment into this gut, which is furniſhed with an infinite number of milky veſſels, called *lacteals*, that receive the finer portion of the aliment; which being conveyed by theſe little conduits, acroſs the meſentery, to one common receptacle, aſcend upwards along the ſpine, through a large channel, which is called the *thoraic duct*; and from thence into the

the veins, and is incorporated with the blood. The coarſer part of the food, by a periſtaltic or vermicular motion, which is common to all the guts, falls downward, and is diſcharged in excrement. There are in this gut, beſides the veſſels it has in common with the reſt, two ducts which open into it; the one from the liver, and the other from the ſweet-bread, each of which ſends in a juice that contributes to the refinement of the aliment, &c.

The next is the blind gut, which has but one paſſage for the excrements, ſo that they are forced to return back the ſame way they went in.

The three colons (which in man are but one continued gut) are next the blind gut; they are divided into three guts, by two narrow necks of about half a yard in length. This gut is drawn up into many purſes, or cells, by two ligaments, one of which runs along the upper ſide, and another along the under ſide, which, with the aſſiſtance of a valve at its beginning, hinder the excrements either from returning back into the ſmall guts, or falling too ſoon downward, before the chyle or milky ſubſtance is ſufficiently prepared, and ſent off into its proper veſſels. The cæcum ſeems alſo to be inſtead of a valve, to hinder the aliment or chyle from falling too ſoon downward into the colon; for if it was not in ſome meaſure obſtructed, and detained in its paſſage through theſe large conduits, the body could never be ſufficiently ſupplied with nouriſhment. The firſt of theſe colons is about a yard and a half in length;

length; the ſecond about a yard, and that which joins to the rectum, or ſtreight gut, near ſix yards long:

The ſtreight gut, which goes ſtreight downward to the fundament, is not above half a yard in length; its coats are thicker than thoſe above deſcribed, its middlemoſt being very fleſhy and muſcular. At its extremity there is a ſphinctre, which dilates itſelf for the evacuation of the excrements, and keeps it contracted, or ſhut-up at all other times.

There is on the inſide of the whole guts, a mucus, or ſlimy matter, which preſerves them from being hurt, either by the hardneſs of the excrements, or the pungency of any ſharp corroſive humours; for they being, as moſt other membranous ſubſtances, full of branches of nerves, would be in perpetual pain, had not nature taken a ſpecial care of them.

The meſentery, which in the next place comes properly to be deſcribed, is ſo called from its ſituation in the middle of the guts. Its riſe is from the third rack-bone of the loins, and is compoſed of three membranes, the middlemoſt being very full of kernels or glands, which, when they happen to be over-much dilated, obſtruct the paſſage of the chyle, which runs acroſs its membranes; and the body being thereby deprived of its nouriſhment, becomes lean and emaciate; and at length falls into irrecoverable diſeaſes.

At its riſe it is gathered together in a vaſt many plaits or folds, which being open to that part of it to which the guts adhere, makes them lie in

thoſe circumvolutions and turnings in which we always obſerve them; and this ſeems abſolutely neceſſary, becauſe if they were not tied in ſuch a manner, but let looſe, the excrements would either paſs too quickly through them, or elſe be wholly obſtructed, by reaſon they would be apt to twiſt and entangle one with another.

In a horſe the meſentery is uſually above a quarter of a yard in breadth, and beſides the milky veſſels which are ſuſtained by it, it has abundance of lymphatics, which ſerve to dilute the chyle. Its veins are branches of the porta, and its arteries the meſeraic or meſenteric; as to its uſe, it is ſufficiently demonſtrable, from what has been already ſaid concerning it and the guts.

## TABLE III.

*Repreſents the Guts, as they appear after the Caul is taken away.*

A. Repreſents the gut colon, with all its circumvolutions and folds, with the ſmall necks, which divide it into three parts; as alſo the ſpace which it takes up in the lower belly.

B. The cæcum, or blind gut.

C. The rectum, or ſtreight gut.

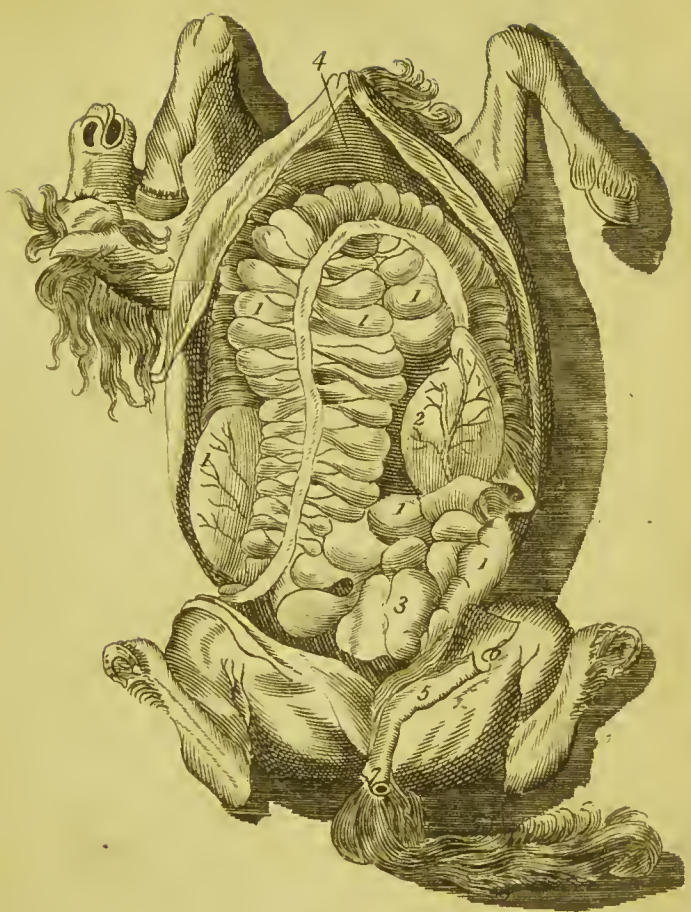
D. Part of the diaphragm, or midriff.

E. The yard.

F. The glans, or nut.

G. The fundament, with its ſphincter.

*SECT.*




*A Representation of the Intestines, the Caul being taken off.* (*See table III.*)

☞ *The Reader is requested to substitute* A B C D E F G, *in the Places of* 1 2 3 4 5 6 7, *agreeable to Page* 74.

## SECT. XII.

### OF THE PORUS BILIARIUS, OR GALL-PIPE, WITH THE SPLEEN, PANCREAS, AND LIVER.

THE ſpleen, or milt, is a ſoft ſpungy ſubſtance, of a black livid complexion, a triangular ſhape, but ſomewhat long, ſituated on the left ſide oppoſite to the liver; it adheres both to the midriff and ſtomach. It is covered with a membrane from the peritonæum, which, becauſe of its ſoft ſpungy ſubſtance, is conſiderably thick. Its veins are a branch of the porta; its arteries ſpring from the left cæliac branch, and its nerves from the left intercoſtal. It has alſo lymphatic veſſels, which glide along the caul to the receptacle of the chyle. There is no part of the body wherein anatomiſts have differed more, than concerning the uſe of the ſpleen. To paſs by a great many various opinions about it, it has been thought to give an aſperity and fouriſhneſs to the blood which comes into it; and as that blood is conveyed from thence into the liver, it was believed to be in order to engender, or keep up, a moderate ferment in it; but becauſe ſeveral animals have lived after it has been cut out, and been more briſk than when they had it, it is not therefore improbable, but it has ſome other uſe not yet known, eſpecially ſince the modern diſcoveries allow of no ſuch ferment. Is is, however, certain, that it ſerves to cheriſh and ſupport

the left ſide of the ſtomach, as the liver does the right to further digeſtion.

The *ſweet-bread*, or *pancreas*, ſo called, becauſe it is altogether fleſhy, is ſituated under the back part of the ſtomach, and lies acroſs the belly. It is a white and ſoft glandular ſubſtance, ſtored plentifully with ſingle kernels over its ſurface, which are ſomewhat prominent, and of a reddiſh colour: it has its cover alſo from the peritonæum. Its arteries ſpring from the cæliacal, and its nerves from the intercoſtals; its refluent blood is ſent into the liver, as that of the ſpleen. Beſides, it has a paſſage into the firſt gut, a little below the ſtomach, which is called the pancreatic duct. The liquor which that duct diſcharges, is believed, in conjunction with the gall, to ſweeten the chyle, to free it from all manner of impurities. This liquor ſeems chiefly to be derived from the little glands which are on its outſide, there being a great many little pipes detached from them through all parts of it, to the above-mentioned duct. As for the farther uſes of the ſweet-bread, I ſhall only take notice, that as it lies acroſs under the lower part of the ſtomach, it not only contributes to its warmth, but may help to keep it ſomewhat elevated, by which means its muſcular action is not hindered, as it might probably be when full, if its weight was not ſupported.

The ancients believed the liver to be the chief inſtrument of ſanguification; neither could they be much blamed for this opinion, it being agreeable to the firſt diſcoveries made in anatomy.

Its

Its ſubſtance is fleſhy, ſomewhat reſembling congealed blood. It is ſituated on the upper part of the lower belly, on the right ſide, under the ſhort ribs. The liver of a horſe has four lobes, which graſp the ſtomach, and keep it warm. It is tied by three ligaments, the chief of which is called its *ſuſpenſory*, and is a production of the peritonæum; it is very ſtrong and nervous, ariſing from the midriff towards its right ſide, and is inſerted in the thickeſt part thereof, where its uppermoſt cover, expanding itſelf, forms the proper tegument of the liver; another ligament fixed to the point of the breaſt-bone, in conjunction with the firſt, keeps it ſuſpended in ſuch a manner that it can neither fall downward nor ſideway. The umbilical vein, by which the fœtus is nouriſhed, becomes its third ligament, which is very neceſſary in a horſe, becauſe it preſerves the liver, in galloping or leaping, from falling forward, and bearing too hard upon the midriff.

Its veins are the principal branches of the cava, or hollow vein, whoſe other branches receive all the blood which is brought in by the porta, forming the hollow vein above-mentioned, by a combination of all their roots into one great trunk. The *porta* (ſo called from its office) is formed from the branches which have been already obſerved to come from the ſpleen, ſweet-bread, and guts, &c. Its arteries are from the cæliac, and its nerves from the intercoſtals, &c. Its lymphatic veſſels take the ſame courſe as thoſe of the ſpleen and pancreas.

Though

Though a horſe has no gall-bladder, yet he wants not ſufficient ſtore of gall, which is ſeparated by its proper veſſels, and conveyed directly into its duct, which opens into the firſt gut, about ten or twelve inches below the undermoſt orifice of the ſtomach. This liquor is ſeparated from the blood, which is imported to the liver from the ſpleen, &c. and ſerves, in conjunction with the pancreatic juice, for the purpoſes above-mentioned.

The liver is of great uſe, as it is a conſtant receptacle for all the blood which is returned from the ſpleen, pancreas, and guts, where it no doubt undergoes ſuch changes and alterations, by the ſeparation of the gall, as are neceſſary before it goes into the heart, to fit it for a freſh progreſs into all parts of the body. It is, moreover, exceeding helpful to the ſtomach, as it not only cheriſhes it by its warmth, but alſo keeps it ſteady, and preſerves it from any counter action that might mar its muſcular motion, and hinder digeſtion.

## *SECT. XIII.*

### OF THE KIDNEYS, URETERS, AND BLADDER.

THE kidneys are ſeated in the loins, behind the ſtomach and guts, the right under the liver, and left under the ſpleen. They are ſeldom alike. In a horſe, that on the right ſide is ſomewhat triangular, and the other is much broader below

below than at top, not unlike the figure of an egg.

They are nouriſhed by their own proper veſſels, which are called the *emulgents*, the artery ſpringing directly from the aorta, and the vein having as near a communication with the cava. Their nerves ſpring from the ſame branch of the intercoſtal that goes to the ſtomach, and that is the reaſon why the leaſt diſorder in the kidneys, ureters, or bladder, cauſes ſuch ſudden ſickneſs.

The ſubſtance of the kidneys is chiefly glandular, having, on the outſide, a vaſt number of little kernels, which ſeparate the ſtale from the blood, and from them proceed an equal number of little pipes, or conduits, which run from the circumference towards the centre, like the ſpokes of a wheel. By theſe the urine is conveyed into other glands, which are called the *carunculæ papillares*, from the reſemblance they bear to teats, which, in a horſe, are as big as ſmall field beans; and when it has undergone a farther change in theſe glands, it is emptied into a cavity called the *pelvis*, or baſon, which is in the centre of each kidney. This being a membranous ſubſtance, is no other than an expanſion of the ureters, which are two canulas, or pipes, from which the urine paſſes from their reſpective kidneys to the bladder.

The ureters keep not a ſtreight courſe from the kidneys, but in form of the letter *ſ*; they enter into the back and lower part of the bladder, where, paſſing about an inch between its membranes, to

prevent

prevent the return of the urine the ſame way, they are inſerted near its ſphinctre, or neck.

The bladder is ſeated in the lower part of the belly, within that circumference which is made by the loins, hip-bones, and ſhare-bones. It is of an irregular ſhape, ſomething in reſemblance of a pear, compoſed, as the ſtomach and guts, of a treble coat, or ſkin, the outermoſt from the peritonæum, the middlemoſt muſcular, the innermoſt very thin, and of an exquiſite ſenſe, having nerves both from the intercoſtals, and the vertebræ of the loins. Its veins and arteries are branches of the hypogaſtrics. The bladder is perforated, or bored, not only where the ureters enter into it, but alſo in its neck, to give paſſage to the urine which runs along the urethra, in order to its diſcharge out of the body. Its neck is compoſed of muſcular and fleſhy fibres, which form a ſphinctre muſcle, ſuch as has been deſcribed belonging to the fundament, which opens and ſhuts at pleaſure.

As for the capſulæ atrabilares, which ſome perſons have called deputy-kidneys, becauſe they are ſituated near the true kidneys, and ſomewhat reſemble them.

We will not waſte our reader's time about them, ſince anatomiſts have not as yet clearly determined their uſe.

## SECT. XIV.

### OF THE PARTS OF GENERATION IN A HORSE AND MARE.

THE yard being the moſt external of all parts adminiſtering to generation, I ſhall therefore begin with it. Its outward cover, or ſheath, is nothing elſe but a production of the ſcarf-ſkin, hide, and fleſhy pannicle, which are tied by an appendage, called the *frænum*, or bridle, which runs along the under ſide, in a narrow ſlip, almoſt to the root of the yard; ſo that the ſheath folds back in ſeveral wrinkles, and gives full liberty to the yard, as often as it is extended and drawn.

The internal ſubſtance of the yard conſiſts of two nervous bodies, which, as in man, make up the greateſt part of its bulk. Theſe two bodies are very ſpongy and open in a horſe, and when dried are extremely light; but in a bullock, and ſome other animals, they are more compact and ſolid. They are compoſed of a great number of branches of veins, arteries, and nerves, which are variouſly interwoven one with another. On the under ſide, between theſe two cavernous bodies, runs the urethra, from the ſphincter of the bladder to the extremity of the glans or nut, which affords a paſſage both for the urine and ſeed.

The glans is an appendage to the yard. It is of a round figure, but very thin in proportion to what it is in man; it is not ſo cavernous as the yard,

but of a quicker ſenſe, being the chief ſeat of pleaſure in copulation.

The yard has two muſcles on each ſide, towards its root. The firſt pair ſpring from the external proceſs, or knob of the hip-bone, and help the yard in erection; the other two riſe from the fundament, and are called the *dilaters*, becauſe they ſerve to open and widen it for the freer paſſage of the ſeed and urine. Its veins and arteries ſpring from the hypogaſtrics, and its nerves from the lower vertebral.

Next to the yard the teſtes, or ſtones, properly take place, becauſe in them the ſeed is prepared. They are two glandular bodies, of an oval figure, ſituated under the root of the yard, hanging in a ſcrotum, or bag, which is no other than a production or continuation of the ſheath above deſcribed. The ſtones have each a branch from the aorta, or great artery, which brings the blood directly from thence, not only for their nouriſhment, but for ſeed.

Their veins are branches of the cava, ſome of which open into the great trunk thereof, very near the emulgents, but not in the emulgents, as in men. Theſe are called the *præparantia*, or preparing veſſels, which, from the upper ſide of the ſtones, are curiouſly claſped and twined, like the tendrils of vines, and growing narrower, and uniting more together as they advance towards the belly, they are denominated by ſeveral names, as the *pyramidal body*, and *plexus pampiniformis*, &c. On the back part of each ſtone there is a longiſh body, ſomewhat white and round, called the *paraſtatæ*, or *epididimæ*; from each of theſe runs a large veſſel, which emptics itſelf into the ſeed-

bladder,

bladder, ſituated on each ſide of the root of the yard, and on the inſide of the ſhare; theſe are called the *deferentia*, or the veſſels which carry back the ſeed. Both the deferentia and the blood-veſſels above deſcribed, are incloſed in a capſula, or ſheath, which is a production of the peritonæum, proceeding from the lower belly on each ſide, which not only ſerves for this uſe, but forms the outermoſt cover of the ſtones, and is that which anatomiſts call the *tunica vaginalis*.

Each ſtone has a cremaſter, or ſuſpenſory muſcle, to draw them up in time of copulation, which, ariſing from the ligament of the ſhare-bone, expands itſelf all round the inſide of the *tunica vaginalis*, and forms their ſecond coat. Beſides theſe, the ſtones have an innermoſt coat or cover, which is thick and nervous, and not only contributes to their warmth, but is a great defence to their true ſubſtance, which conſiſts of a very fine clue of veſſels, made up of veins, arteries, and nerves, and formed out of thoſe above deſcribed; ſo that the liquor paſſing through ſo many circumvolutions and turnings in veſſels which are infinitely ſmall, it is thereby ſo often ſtrained and refined, till it becomes fit to enter into the paraſtatæ, where, probably undergoing ſome farther degrees of refinement, it is completely formed into ſeed.

There are ſeveral glandular bodies ſituated at the root of the yard, immediately before the ſeed-bladders, and are therefore called *proſtates*. Theſe ſeparate a clear ſlimy matter, which being forced out in time of copulation, no doubt preſerves the urinary paſſage from the pungency of the more ſpirituous

parts of the ſeed; and may at other times, in conjunction with the mucus which is in that paſſage, defend it from the heat and ſharpneſs of urine, ſand, or other gritty matter, ſent into it from the bladder.

Having given this ſhort account of the genitals of a horſe, we come, in the next place, to thoſe of a mare, which differ from the other, not only as they are all contained within the cavity of the belly, but likewiſe as to their figure and uſe.

A mare has two teſtes, or ſtones, as well as the horſe, which lie backward on each ſide under the loins; and theſe are nouriſhed with arteries, which ſpring from the aorta, and are more in number than thoſe of a horſe.

The teſticles of a mare are not as thoſe of the horſe, oval and round, but flat like a garden bean. They have their common and proper teguments, and in their inner ſubſtance ſeveral ovaria, or egg-beds, which are receptacles for the male-ſeed.

Somewhat forward and below theſe ovaria, is ſeated the womb, or matrix, between the neck of the bladder and the ſtreight gut, where it is firmly tied in its place by two pair of ligaments. It is differently ſhaped from that of a woman, being divided by its cornua, or horns, whoſe hollow round inſertion ſeems to compoſe its fundus, or bottom. Out of theſe horns ariſe the tubæ, or trumpets. At their exit they are very ſmall, but in their progreſs, grow wider, and ſomewhat contorted. Towards their extremity, they are again contracted into a ſmall orifice, or mouth, with a jagged membrane all round their circumference, not unlike the huſk of a roſe. The uſe of theſe tubes is to convey the ſeed from

from the womb to the ovaria, where the impregnation firſt begins, and alſo to afford it a paſſage back into the ſame place.

The ſubſtance of the womb is fleſhy, incloſed within two membranes, which are nervous and ſenſible. It has a great number of blood-veſſels from the hypogaſtrics, which, after conception, enlarge it like a ſponge, and fill it with blood, not only that it may become a proper bed for the fœtus to lie in, but alſo to ſupply it with ſufficient nouriſhment.

The vagina, or ſheath, is an appendage to the womb, being only a production of its membranes; it is that which forms the long paſſage reaching from the pudenda, or privities. On its inſide are ſeveral rugæ and caruncles; the uſe of which are to ſtimulate the horſe to a vigorous diſcharge of his ſeed. Beſides theſe, there are the nymphæ, juſt within the labia, and the clitoris more backward, which not only ſerve to the ſame purpoſe, but to augment the pleaſures of the mare; the clitoris being of a ſpongy body, anſwering to the glans, or extremity of the horſe's yard, and endued with the ſame ſenſation. The inſide of that paſſage has a thin mucus from its glans, which is not only a defence to it, but likewiſe ſerves to facilitate the paſſage of the horſe's yard, which being an extremely ſenſible part, would otherwiſe be hurt by its unevenneſs. About an inch within the lips, on the upper ſide, there is a ſmall paſſage, by which the urine is diſcharged from the bladder, into the extremity of the ſheath. And as the bladder has its ſphinctre to ſhut up its neck when the urine is drained from it, ſo the nymphæ do the ſame office in the vagina; and when they

they are contracted, or rather clofed together, form the fiffure or chink. They are alfo of farther ufe to prevent flies, dirt, or any extraneous matter from getting within it.

The udder is another part peculiar to the mare, being that from whence the foal receives its firft nourifhment after its birth. Its fubftance is partly fat, and partly glandular. By its glands the milk is feparated from the blood, which is brought into it by the hypogaftric arteries, and carried along in little pipes to two glands, which are pretty large, feated at the root of each pap, where undergoing its laft refinement, it is difcharged firft into its proper veficles, and then into the paps which convey it to the foal.

Though the udder of a mare feems to be one undivided fubftance, yet, as in all other animals, it is truly feparated; the veffels of one pap having no immediate communication with the veffels of the other. So that if a mare fhould have one fide of her udder hurt, the foal may ftill be nourifhed by the other.

It may perhaps be expected that we fhould put an end to this chapter, by giving fome account of the conception, and the manner of the foal's being nourifhed in the womb; and likewife that we fhould take fome notice of the male-feed, which, by moft modern anatomifts, is believed to be full of animalcula, or little moving creatures, which, they fay, by the help of a microfcope, may be plainly difcerned in that liquor. But as thefe things would not only be too tedious, but of more curiofity than ufe to the farrier,

*These Figures are a Representation of the Stomach & other Parts in the lower Belly.*

*(See Table. IV)*

farrier; and as anatomiſts differ among themſelves in many circumſtances concerning them; and moreover as it would, beſides a bare knowledge of the ſtructure of the parts, require in the reader a competent ſkill in natural philoſophy, to underſtand thoſe diſputes fully, we will not therefore detain him about them, but proceed to a deſcription of the middle ventre, or cheſt, being that which properly comes next under conſideration.

## TABLE IV.

*Repreſents the Stomach, together with ſeveral other Parts contained in the lower Belly.*

Fig. 1. *Sheweth the Stomach taken out of the Body.*

A. The gullet.
B. The upper orifice of the ſtomach.
C. Two nerves diſperſed through the upper part of the ſtomach.
D. The plorus, or lower orifice of the ſtomach.
E. Its enterance into the ſmall gut.
F. The enterance of the porus biliarius, or gall-paſſage, into the beginning of the ſmall gut.
G. The enterance of the pancreatic duct into the ſame gut.
H. Part of the firſt gut.

I. The

I. The outside of the stomach, with the ramifications, or the branchings of the blood-vessels upon it.

K. The outermost coat of the stomach, turned back.

L. Its middle coat, with the ramifications of the nerves upon it.

M. The gastric vessels reinserted into the bottom of the stomach.

Fig. 2. *Sheweth the Stomach turned inside out.*

A. The left orifice, or mouth of the stomach.

B. The right or lower orifice.

C. The wrinkles and folds of its muscular coat.

Fig. 3. *Shews the hollow side of the Liver.*

A. Its four lobes.

B. The vena porta, with its egress out of the hollow side of the liver, together with a nerve of the sixth pair creeping over it.

C. The trunk of the vena cava, or hollow vein.

D. The porus biliarius, or gall-passage.

E. A branch of the cæliac artery.

Fig. 4. *Represents the Spleen, with its Vessels.*

A. The concave, or hollow side of the spleen.

B. The splenic vein.

C. The splenic artery.

Fig. 5. *Shews the Pancreas or Sweetbread freed from its Membrane and Part of its Substance, the better to shew the Course of its Vessels.*

A. The body of the pancreas dissected.
B. The pancreatic duct.
C. The orifice of the said passage into the first gut.
D. An artery which is dispersed through its substance.
E. A vein which accompanies the said artery.
F. A branch of the intercostal nerves.

Fig. 6. *Shews the Kidneys, Ureters, and Bladder, with the Parts of Generation in a Horse.*

A. The descending trunk of the hollow vein.
B. The descending trunk of the great artery.
C. The emulgent veins arising out of the hollow vein.
D. The emulgent arteries springing from the great artery.
E. The kidneys.
F. The deputy-kidneys.
G. The ureters.
H. The bladder.
I. Its inside.
K. Its neck, where it opens into the urethra.
L. The cavernous body of the yard.
M. The urethra.
N. The seed-preparing veins, commonly so called.

O. The preparing arteries.
P. The pyramidal bodies, or corpora varicoſa.
Q. The right teſticle, with its innermoſt coat.
R. The left, diveſted of its coats.
S. The epididimis of the left teſticle.
T. The deferent veſſels.
U. The ſeed-bladders.
X. The proſtates.

Fig. 7. *Repreſents the Womb of a Mare, with its Horns and Tubes, &c.*

A. The bottom of the womb.
B. The vagina, or ſheath.
C. The ſheath cut open to ſhew the clitoris.
D. The cornua, or horns of the womb.
E. The tubæ, or trumpets.
F. Their fimbria, or jagged orifices.
G. The ovaria, or ſtones of a mare.
H. The broad ligaments.
I. The bladder.
K. Its inſertion into the ſheath, near its orifice.
L. The outward orifice of the ſheath.

Fig. 8. *Repreſents one of the Ovaria, or Teſticles, taken off, and cut through the Middle, to ſhew the Eggs more plain.*

## SECT. XV.

### OF THE MIDDLE VENTRE, OR CHEST, AND ITS PROPER CONTAINING VESSELS.

BY the cheſt is to be underſtood all that cavity which is circumſcribed above the collar bones, and below the midriff, before the breaſt-bone, behind and on both ſides by the back-bone and ribs.

Its containing parts are the muſcles, bones, pleura, and mediaſtinum.

The firſt thing that appears after the common teguments are removed, being the muſcles, we ſhall therefore begin with them, and at the ſame time only take notice of the intercoſtals, leaving the reſt to another opportunity.

The intercoſtals compoſe all the fleſh that we obſerve to fill up the ſpaces between the ribs; they are in number ſixty-four, viz. thirty-two on each ſide; and are diſtinguiſhed by the external and internal, or the uppermoſt and lowermoſt.

The external take their riſe from the lower part of the upper ribs, and end in the upper part of the lower; and the internal from the upper part of the lower ribs, ending in the lower part of the upper; by which means they not only differ in their origins and inſertions, but alſo in the courſe of their fibres, which run directly acroſs each other, in form of the letter X; ſo that their action is alſo contrary. The external extending the cheſt, by raiſing the ribs, and drawing them backward, help to make room for the air in inſpi-

ration, or taking in the breath; whereas the internal contract the breaſt, by drawing the ribs downward toward the breaſt-bone, for expiration, or expulſion of the air.

Next the muſcles on the inſide of the ribs, we obſerve the pleura. It is a double membrane which ſprings from the inſide of the ſpine; and is believed, by ſome, to take its origin from the coats of the nerves. It is perforated in ſeveral places, for the ingreſs and regreſs of the veſſels which go from the heart to the head, and the veins which return from thence; as alſo for ſuch as go downward to the lower belly and extremities, and thoſe which return from thence to the heart.

Its veins are from the vena ſine pari, and upper intercoſtals; its arteries from the upper intercoſtal, and its nerves from between the vertebræ of the back.

As the peritonæum furniſhes proper teguments for all the viſcera in the lower belly, ſo this performs the ſame office to all the parts contained in the cheſt, which it involves on all ſides. It is likewiſe a defence to the intercoſtal veſſels which run between its membranes, preſerving them from being grated and hurt by the ribs.

The diaphragm, or midriff, which divides the cheſt from the lower belly, comes next in order. It is a thin ſubſtance, but muſcular and fleſhy, ariſing, according to ſome, from its circumfer nce; and according to others, from the fleſhy productions which ſpring from the vertebræ of the loins. Its middle is nervous, and its two ſides fleſhy; the direction of its fibres are from its back

back and innermoſt part, or nervous body, branching out on each ſide to its circumference towards the ribs. It has ſeveral perforations, or paſſages for the nerves and large blood-veſſels, which retain to and from the lower belly, as alſo a large one for the gullet.

It has veins from the trunk of the cava, with ſome twigs from the vena adipoſa. Its arteries are from the aorta; its proper nerves are two, proceeding from the ſpinal marrow at the third or fourth joinings of the rack-bones of the neck, being in their courſe ſuſtained by the mediaſtinum. Theſe nerves enter in at its centre, and diſperſe themſelves through its whole ſubſtance.

Its chief uſe is in reſpiration, and is the principal muſcle that aſſiſts in that action, dilating and contracting itſelf, as the ribs are dilated and contracted. It is alſo uſeful in aſſiſting the periſtaltic motion of the guts, whereby the chyle is forwarded into its veſſels, and the excrements to a diſcharge. It is, moreover, uſeful to divide the lower belly from the cheſt, as has been obſerved.

As the diaphragm divides the lower belly from the cheſt, ſo the mediaſtinum divides the cheſt in the middle. It is a double membrane, ariſing from the pleura, or rib-coat, where, beginning at the breaſt-bone, it holds a direct courſe towards the back. Near the back and the breaſt, this membrane is united for a little way; but in the middle it is ſeparated ſo wide as to contain the heart and its pericardium, or bag. It is like the pleura, from whence it proceeds very ſmooth on its outſide towards the lungs, but ſomewhat rough

toward

towards the heart, by reaſon the pericardium adheres to it by ſeveral ſmall membranous filaments.

It has veins from the phrenica, or midriff-vein, and from the vena ſine pari; it has alſo one from the ſubclavian, which is proper to it, called the *mediaſtina*. Its arteries ſpring from the phrenica, and its nerves are detached from that pair which deſcend by it to the midriff.

Beſides its uſe in dividing the breaſt, it preſerves the heart from being hurt in its motion by the bony ſides of the cheſt. It is farther uſeful to ſuſtain the veſſels which take their courſe through it, and by its being knit to the midriff, preſerves that muſcle from being drawn too much downward by the weight of the liver, whoſe ſuſpenſory ligament is fixed to it.

## *SECT. XVI.*

### OF THE HEART AND PERICARDIUM, &c.

THE pericardium is that bag in which the heart is incloſed, as in a purſe. It riſes from the baſis or upper part of the heart, from the outer coats of the great veſſels, which ſpring originally from the pleura. It is of a middle ſubſtance, neither very hard, ſo as to hurt the lungs, nor yet ſo ſoft as to be itſelf eaſily injured by the motion of the heart. It is perforated

five

five places, viz. on the right ſide for the aſcending trunk of the cava, which, coming from the liver, enters the right ventricle, and by the ſubclavian vein, which deſcends by the channel-bones into the ſame ventricle; and thirdly, by the pulmonary artery, which goes out of the right venticle into the lungs, and enters the left ventricle. And laſtly, for the great artery that paſſes out of the ſaid ventricle.

Its veins are from the phrenic and axillaries; its arteries are ſo ſmall, that they are not very diſcernible; its nerves come from the par vagum.

The uſe of this purſe, or bag, is to cover the heart, and be a defence to it, to contain a moiſture not only to keep it glib and eaſy in its motion, but alſo cool. There are various opinions concerning this liquor of the pericardium, and from whence it is derived, but we will not give the reader any trouble by reciting them, but haſten to the heart itſelf.

The heart is the principal fountain which ſends the blood and nouriſhment into all parts of the body, and is wonderfully ſuited in every reſpect for that purpoſe.

Is is ſituated in the midſt of the cheſt, where it is encompaſſed by the lobes of the lungs, having its point inclining to the left ſide. It is in ſhape not very different from what it is in moſt other animals; only in a horſe it does not grow ſo gradually narrow towards its point, as in ſome, nor ſo broad in proportion at its baſis, or root.

Its ſubſtance is fleſhy, and very ſolid, that it may the better endure the perpetuity of motion, and

and expel the blood with more force to all parts of the body. It is for that purpoſe compoſed of muſcular and fleſhy fibres, which, towards the top, take their direction ſpirally, like the contortions of a ſnail's ſhell.

It is ſaid to have a two-fold motion, which, by anatomiſts, is called its *ſyſtole* and *diaſtole*; or, in other words, its contraction, when its top is drawn towards its baſis, or bottom, for the expulſion of the blood into the arteries, and its dilation when it is filled with blood from the veins. As often as we feel the pulſe beat, ſo often is the heart contracted, it being the contraction, or ſyſtole of the heart, which communicates that vibration, or pulſation, to all the arteries.

The heart, beſides its pericardium above-deſcribed, has two membranes, one that covers all its outſide, which it derives from the outer coat of the great artery, and another which lines it through all its inſide, which proceeds from the inner coat of the ſaid veſſel. It is ſtored with fat towards its bottom, which keeps it moiſt and glib, as the water in the pericardium does the reſt of its ſubſtance.

Beſides the large veſſels which empty themſelves into it, and thoſe which are conſtantly fed by it, it has a vein and two arteries, which are proper to it, and by which its ſubſtance is chiefly nouriſhed. Theſe being wove all round it like a garland, are therefore called *coronæ*. It has alſo many ſmall branches of nerves, which ſpring from the

the eight pair, and ſend forth other ſmall branches to the pericardium.

Within the heart there are two ventricles, or caverns, divided into the right and left, by a fleſhy partition. The right of theſe ventricles is much the wideſt, but not quite ſo long as the left; neither is it of ſo compact a ſubſtance, or of ſo great ſtrength, the ſeptum, or wall, being peculiar to the left. The reaſon of this difference ſeems to be, becauſe the right ventricle ſends the blood only into the lungs by the pulmonary artery, whereas the left detaches it into all parts of the body. The inſide of theſe ventricles is very curiouſly made up, and interlined with ſeveral fleſhy pillars, ſomewhat reſembling the ſmall Gothic columns; the uſe of which ſeems to be chiefly for the better communication of the blood and chyle, being, in every contraction, wrung through them, as through a ſieve.

The large veſſels, which we have already obſerved to retain to the heart, and likewiſe thoſe by which it is conſtantly emptied, have each of them valves, for the better performance of their ſeveral functions, viz. the vena cava, which enters into the right ventricle, has three, called *trienſpides*, from their triangular figure. They are placed at the bottom of the heart, where the ſaid veins enter, and pointing inward, a free admittance is given to the blood, which goes into the heart, but none of it can return the ſame way. The vena arterioſa, or pulmonary artery, which carries the blood from the ſame ventricle to the lungs, has alſo three valves, called *ſigmoideæ*, from the reſem-

blance they bear to the old Greek ſigma; theſe look from within outward, by which means they hinder the blood from returning back again into the heart.

To the arteria venoſa, or pulmonary vein, which returns the blood from the lungs into the left ventricle, belong two valves, called *mitrales*, from the reſemblance they bear to a mitre. Theſe have the ſame office as thoſe of the cava above deſcribed. And the three valves of the aorta, or great artery, called *ſemilunares*, from their being faſhioned like ſo many half-moons, have the ſame office as thoſe of arteria pulmonaris.

Laſtly, there belong alſo to the heart two auricles, or earlets, from the reſemblance they bear to ears, being ſeated like two purſes on each ſide of its baſis. Theſe earlets have their diaſtole and ſyſtole, like unto the heart, only with this difference, that when the heart is contracted, the earlets are dilated; and when the heart is dilated, the earlets are contracted; the reaſon is, becauſe they receive the blood from the cava and pulmonary veins, ſo that as they empty themſelves into the heart, it forthwith becomes dilated; and when the heart is contracted, they muſt of conſequence be filled, the courſe of the venal blood being, at that interval, intercepted.

The uſe of the auricles is to meaſure out the blood in certain proportions, before it enters the heart, leſt, ruſhing in with too great an impetuoſity, it might not only cauſe the valves to be violated, but occaſion a ſuffocation in the heart itſelf,

itſelf, whereby the vital faculty might be quite deſtroyed.

## *SECT. XVII.*

### OF THE WINDPIPE AND LUNGS.

THE lungs are the chief inſtruments of breathing, they fill up the greateſt part of the cavity of the cheſt, being divided into two lobes, one of which lie on the right ſide of the mediaſtinum, and the other on the left.

They are compoſed of the various ramifications, or branchings of the veins, arteries, and nerves, together with the windpipe, the extremity of whoſe branches are very finely wove together, ſo as to form an infinite number of little veſicles, or air-bladders, reſembling ſmall grapes when they are extended, but not very perceivable at any other time. When an animal ſucks in the air, theſe little veſiculæ, or bladders, are then dilated and full, and when the air is emitted, as in expiration, they become empty.

The windpipe, whoſe branches make up a great part of the ſubſtance of the lungs, is that great channel, which beginning at the root of the tongue, deſcends down the throat, and as ſoon as it reaches the lungs, divides itſelf into two large branches, one to each lobe. Theſe ſend off a great many

branches, which detach an infinite number of other branches that reach into all parts, and whose extremities open into the veſiculæ, or bladders, above deſcribed. This pipe is called the *trachea*, or *aſpera arteria*, from its roughneſs, which name it obtains from the throttle to the lungs; but thoſe branches which it ſends off into each lobe, are termed its *bronchia*.

It is compoſed of a double membrane, which incloſes its circular rings, the innermoſt of which being muſcular, made up of ſtreight and oblique fibres, it thereby contracts and dilates itſelf in the action of breathing. Theſe rings do not quite encompaſs the trachea, or aſpera arteria, but leave a fourth part of the circle wanting, leſt they ſhould hurt the gullet whereon it lies, and occaſion pain in ſwallowing; but after it divides itſelf into its bronchia, they go quite round every branch of it, ſo far as is perceivable to the naked eye; and doubtleſs hold the ſame form where its branches are the moſt minute and ſmall. Theſe rings being, in a great meaſure, cartilaginous, endue the whole windpipe, and all its branches, with a ſort of elaſticity, or ſpring, whereby it acts in concert with its membranous and muſcular parts.

The blood veſſels, which alſo compoſe a great part of the bulk of the lungs, are partly a branch from the great artery, but principally the pulmonary artery and vein. Theſe veins and arteries have frequent inoſculations, or communications one with another, by which means they become curiouſly interwoven towards thoſe veſiculæ, or air-

air-bladders above mentioned, which kind of ſtructure is, by moſt anatomiſts, believed to be to the end that every minute particle of the blood in thoſe parts, may be impregnated with air.

There are, beſides theſe, abundance of lymphatics, which attend on the veins and arteries through the whole ſurface of the lungs, to receive the ſuperfluous moiſture ſeparated by the glands, which they afterwards diſcharge into the thoracic duct. The lungs have alſo nerves, which ſpring from the recurrent branches of the wandering pair. Theſe accompany the blood-veſſels through their whole ſubſtance, and are divided into innumerable branches.

As to the uſe of the lungs, it is evident, from what has been already ſaid, that they are the chief organs of reſpiration, being, in every reſpect, ſuited to receive the air, which is the proper element for all quadrupeds, as well as man, to breathe in. And as the windpipe, with all its branches, is made up of cartilaginous rings, which act in concert with its muſcular coat, it thereby becomes endued with a ſort of elaſticity, or ſpring, by which it is extended as often as the air is drawn in, and in expiration becomes again contracted. This ſort of mechaniſm is plainly viſible in the windpipe of any animal, which being drawn out to its full length, immediately gathers itſelf up, as ſoon as the force whereby it was ſtretched is removed. The elevation and depreſſion of the cheſt is in like manner occaſioned by the extenſion and contraction of the lungs; and as its action

action is thus ſubſervient to them in reſpiration, it ſeems alſo to be chiefly derived from them, ſo that the air may be properly termed the principal though not the immediate cauſe of that action alſo.

Now as we are ſure the air is the immediate and principal cauſe of reſpiration, it would be to little purpoſe to ſpend time about the various opinions concerning that motion of the lungs, viz. whether it be natural or animal, as the philoſophers term it, or whether, according to ſome, it be partly natural and partly animal; we ſhall only therefore obſerve, that although it is ſomewhat in our power to regulate that action, by drawing in more or leſs air at pleaſure, yet we are very well ſatisfied no creature can impriſon it in the lungs, or keep it out two minutes, without a manifeſt violence to nature; ſo that it ſeems to be chiefly natural, there being nothing in it voluntary, farther than that we can, in ſome meaſure, help ourſelves in accidents which may happen to thoſe parts, which cannot but occaſion pain as often as the lungs and cheſt are extended or depreſſed, if we ſhould let them have their full liberty.

But beſide the uſe of the lungs in reſpiration, by the air which they perpetually draw in, they invigorate the blood, and render it more fit for the ſeveral functions of life. And this will appear reaſonable, when we conſider that the whole maſs of blood takes its courſe through the lungs before it is detached into any other part of the body;

body; ſo that during its progreſs there, it is not only purged from many of its thinner impurities, which viſibly fly off from the mouth and noſe in breathing, but alſo from its groſſer parts, which by expectoration, are diſcharged through the pipes of the aſpera arteria. And as the blood-veſſels accompany the windpipe in all its branches, the blood itſelf is not only thought to be thereby cooled, but at its return is believed to give a moderate temperament to the heart, which, no doubt, muſt be very much heated by the perpetuity of its motion.

Having thus given a ſhort account of the heart and pericardium, as alſo the lungs and windpipe, together with their ſeveral uſes, we ſhall, before we leave this middle cavity, take ſome notice of that large kernel called the *thymus*. It is ſo called, from the reſemblance it bears to a leaf of thyme in its ſhape, and is ſituated acroſs the uppermoſt part of the breaſt, along the collar-bones, covering them on the inſide.

Its uſe is to prevent the two large branches of the aorta and cava from being hurt by the ſharp edges of theſe bones in their paſſage over them. And as it ſerves to this purpoſe chiefly (there being no veſſels or excretory ducts viſible in its ſubſtance) it is therefore much larger in foals than in grown horſes, as it is indeed proportionally in all other young animals, becauſe the older any creature grows, the coats of the blood-veſſels become the more nervous and ſtrong, and therefore are not in ſuch danger of being abraded.

*SECT.*

## SECT. XVIII.

### OF THE LARYNX AND PHARYNX, WITH THE TONSILS, &c.

THOUGH theſe do not properly belong to the cheſt, yet as we have already treated of the gullet and windpipe, to which the larynx and pharynx are united, and as the one has communication with the lower ventre, and the other with the cheſt, we have therefore taken notice of them under this diviſion, leaving thoſe parts by which they are circumſcribed, to be conſidered with the bones and muſcles.

The larynx is compoſed of five cartilages, or griſtles, the firſt of which is called *ſcutiformis*, becauſe it reſembles a ſhield; the next is called *annularis*, from its likeneſs to the ring which the Turks wear on their thumb, when they go a ſhooting. The third and fourth, becauſe they are joined together under one common tegument, and reſemble an ewer, are therefore termed *guttales*; theſe two form the glottis, or little tongue. The fifth is named the *epiglottis*, becauſe it is placed above the glottis. The ſubſtance of this is ſoft, and its ſhape like an ivy-leaf, and ſerves as a valve to hinder any thing from falling into the windpipe.

Theſe cartilages are moved by ſeveral pair of muſcles, and ſerve principally to frame and modulate the voice in all creatures, and are therefore the inſtruments of neighing in horſes.

The

The larynx has two pair of glands, or kernels, belonging to it; one pair is placed on its upper part, and at the ſides of the uvula, and are called the *tonſils*; and by ſome, in human bodies, the *almonds* of the *ears*. Theſe chiefly ſeparate the ſlaver which comes from a horſe's mouth, and ſerves to moiſten not only the larynx, to which they chiefly belong, but alſo the gullet, by which means every thing paſſes down it the more readily.

The other pair are placed at the lower end of the larynx, one on each ſide of the ſcutiform, or ſhield-like griſtle; theſe in horſes are very large, and are ſwelled when a horſe has got the glanders.

The top of the gullet, or pharynx, which is ſo called from its office, becauſe it carries and conveys food from the mouth towards the ſtomach, is ſomewhat more fleſhy than the reſt of the gullet, being alſo ſeated in the upper part of the throat, behind the larynx. It has ſeveral muſcles whereby it acts, but theſe ſhall be treated of hereafter.

## TABLE V.

*Shewing all the Parts of the middle Cavity, or Cheſt.*

Fig. 1. *Repreſents thoſe Parts* in ſitu.

A. The outward tegumcnts laid back.
B. The breaſt-bone, and ſome part of the ribs alſo laid back to ſhew the parts contained in the ſaid cavity.
C. The great kernel, called *thymus*.
D. The heart.
E. The right and left lobes of the lungs.
F. The mediaſtinum.
G. Part of the midriff.

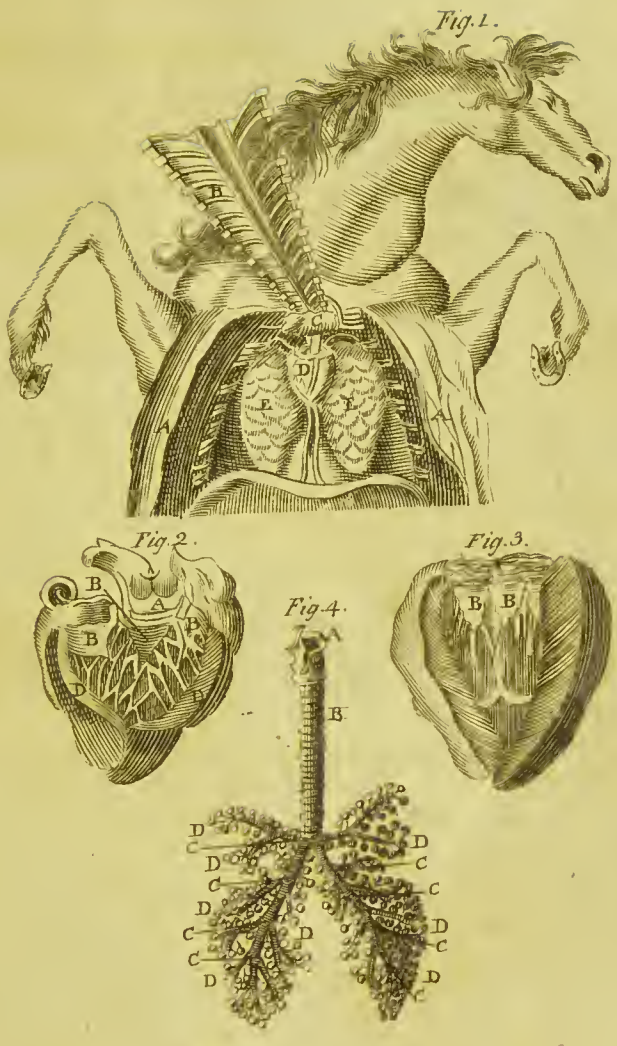
Fig. 2. *Shews the Vena Cava, and right Ventricle of the Heart diſſected.*

A. The orifice of the coronary vein.
B. The treble pointed valves.
C. The fibres which faſten the ends of the valves to the ſubſtance of the heart.
D. The ſides of the ventricle.

Fig. 3. *Shews the left Ventricle alſo opened lengthways, to ſhew its Valves.*

A. The pulmonary vein coming from the lungs.
B. The valves called *mitrales*.

Fig.




*This gives you A View of all the parts of the Cavity of the Chest; in Situ (See table V.)*

Fig. 4. *Repreſents the Lungs diveſted of their Parenchyma, or fleſhy ſubſtance.*

A. The larynx.
B. The windpipe.
C. Its various branches.
D. The innumerable little bladders at the extremities of theſe branches.

## *SECT. XIX.*

### OF THE UPPER CAVITY, OR HEAD, AND ITS PROPER CONTAINING PARTS.

AS the parts already deſcribed have always been eſteemed the ſeat of the vital faculty, ſo the head is accounted that of the animal, it being the organ from whence all ſenſations are derived.

The proper containing parts of the head are reckoned to be five, viz. the *muſcles*, *pericranium*, *perioſteum*, *ſkull*, and the *meninges*, or membranes contained within it. Leaving the muſcles and the ſkull to be treated of in their proper places, we ſhall begin with the pericranium.

It is a very thin membrane ſpread over the whole ſkull, adhering every where to the perioſteum, excepting where the temporal muſcles come between them. There are a great number of ſlender fibres, which paſs from it through the

futuræ, or ſeams of the ſkull, to the dura mater, or uppermoſt membrane of the brain; which fibres ſerve to ſtay that membrane in its place, ſo as to hinder the brain from being hurt by the hardneſs and unevenneſs of the ſkull in violent concuſſions of muſcles of the head.

The perioſteum, to which the pericranium adheres, is a ſubſtance of the ſame nature and uſe, only that it is ſomewhat thinner. It is endued with an exquiſite ſenſe, from whence ſometimes ariſes an exceſſive pain when the bones are wounded, they being themſelves altogether inſenſible.

Theſe two membranes have arteries from the carotids, and veins from the external jugulars, and are chiefly of uſe to cover and defend the ſkull from outward injuries, which otherwiſe would be expoſed and laid bare by every ſlight accident.

Immediately under the ſkull, we obſerve the *dura mater*, ſo called from its texture, which is very firm; and likewiſe, as it is generally believed, to give origin to moſt membranes throughout the body. It is the uppermoſt membrane peculiar to the brain, which it involves and covers on all parts, and is ſo well faſtened to the internal proceſſes of the ſkull, that it cannot eaſily be removed; and beſides the communication which has been obſerved to be between it and the pericranium, it is tied to the membrane underneath it, viz. the pia mater, and to the brain itſelf by the blood-

blood-veſſels, which penetrate the ſkull, and are inſerted in it, and paſs through it.

This membrane is double, as the peritonæum and pleura, and ſends forth a production, which in man reſembles a ſickle, and is therefore called the *falx*, it being broad toward the hind part of the head, and narrow and ſharp toward the noſe, and curved at top. This divides the upper part, or cortical ſubſtance of the brain, directly in the middle into a right and left ſide. Within its duplicature are ſeveral cavities, called the *ſinuſes* of the *dura mater*; the longeſt of which runs lengthway from before to the noll, where it is divided into ſome branches, whereof two deſcend downward to the bottom of the occiput, and a third to the glandula pinealis. Theſe are ſuppoſed to be ciſterns that contain the ſuper-abounding blood, which is emptied into them by the arteries, and ſucked up again at leiſure by the veins.

The pia mater, which immediately involves the brain, and adheres cloſe to it in its convolutions and folds, is a very thin membrane, but of exquiſite ſenſe, for which reaſon ſeveral anatomiſts have been of opinion that all the nerves which ariſe from the head, derive their coats from it, and not from the medullar part itſelf. It is furniſhed with an infinite number of arteries, which ſpring from the carotids and cervical arteries, and veins from the jugulars, all which are very ſmall, but finely interwoven one with another.

Theſe two membranes are not only of uſe to cover and involve the brain, in order to preſerve it,

it, and to keep its looſe ſubſtance together, but alſo to ſuſtain the veſſels that enter into it. They are farther uſeful, as they make up the two innermoſt coats which ſheath the pith of the back.

## *SECT. XX.*

### OF THE BRAIN AND CEREBELLUM, WITH THE MEDULLA OBLONGATA, AND PITH OF THE BACK.

THE brain of a horſe is much leſs in proportion than the brain of a man, but is compoſed of a medullary ſubſtance, and has moſt or all the ſame parts which are diſcoverable in a human head.

It is divided into three parts, viz. the cerebrum, cerebellum, or brainlet, and the medulla oblongata.

The cerebrum contains all that ſubſtance which lies uppermoſt in the head, and which is divided in half by the falx above deſcribed. Its outſide is of an aſhy colour, and formed into ſeveral convolutions and windings, but not with any viſible regularity, as the cerebellum; its inſide is white, and therefore called the *corpus calloſum*.

The cerebellum is divided from the cerebrum, by a production of the pia mater, which alſo affords

fords a particular cover to all its folds, which keep them ſeparate from each other. This is made up of four parts, whereof two are lateral, one on each ſide; the other two are in the middle, ſtanding before and behind; they are ſomewhat orbicular, and are called the *proceſſus vermiculares*, from the reſemblance they bear to the worms in rotten timber.

The medulla oblongata is the beginning of the ſpinal marrow; it is of an uniform white and compact ſubſtance, harder than the brain or cerebellum. It ariſes from ſix roots, two of which ſpring from that part of the brain which is called the *corpora ſtriata;* the other four ariſe lower and more backward, from thoſe protuberances which are termed the *nutes* and *teſtes*. It is round, being in length about two inches within the head, before it paſſes out at the noll, whence it is continued along the chine downward to the fundament, and through all that paſſage is termed the *ſpinal marrow*, or *pith* of the back. This has, beſides the pia mater and dura mater, another membrane, which forms its outermoſt or third coat, and is ſaid to ariſe from a ſtrong ligament which binds together the fore part of the rack-bones.

But before we proceed to the uſe of the brain, it will not be amiſs to take a view of the parts ſomewhat more narrowly, that the learner may be the more fully inſtructed in the knowledge of that which in all animal bodies is ſo abſolutely neceſſary and eſſential to life and motion. In order to which, we will follow the uſual method

of

of diſſection, beginning with its under ſide, having already taken a general ſurvey of the whole.

The firſt thing which is the moſt obſervable on that ſide, is the rete mirabile, ſpread all over the bottom of the brain, and is a curious net-work of blood-veſſels, formed out of the ſmall twigs which ſpring from the largeſt branches of the carotid and cervical arteries, having paſſed through the ſkull by proper holes in the bones of the temples. Theſe veſſels are the more adapted and fitted to the nouriſhment of the brain, as they are thus interwoven one with another, by which means the blood takes a much longer ſtay than if they obſerved a more ſtreight and equal direction.

The glandula pituitaria, is the next thing obſervable; towards the bottom of the brain it is encloſed within the membranes, and ſeated in a ſmall cavity in the os cuneiforme, or wedge-like bone, appointed by nature for that purpoſe. It has a conduit called the *infundibulum*, or funnel, which conveys the excrements of the brain into it; and for that reaſon moſt anatomiſts have believed there was a paſſage from it to the noſe; but late enquiries have diſcovered two ſmall ducts which it ſends off to the jugular veins; ſo that ſome are of opinion it is again mixed with the blood. This funnel, or infundibulum, is ſaid to take its riſe from the fore part of the third ventricle, into which this moiſture ſeems to be firſt ſeparated, and is only conveyed by it to the gland above-mentioned, where it probably undergoes another

another degree of refinement, that it may be the better adapted to the purpoſes of nature.

Anatomiſts have, it ſeems, been very much puzzled to find proper reſemblances for ſeveral parts of the brain, having diſtinguiſhed ſome of them by the names of *nates*, or buttocks, and others by that of *teſtes*, or ſtones. Theſe come next under our conſideration; they are four orbicular or round eminences, which jut out from the medulla oblongata, or beginning of the ſpinal marrow; the two firſt being the largeſt, and the two others only appendages to them.

The *corpora ſtriata*, ſo called from their being ſtreaked or chamfered, are only the ends of the two thighs, which proceed from the buttocks; by theſe the medulla oblongata adheres to the brain, as has been obſerved; and by the nates and teſtes above deſcribed, it adheres to the cerebellum, or brainlet.

Between the buttocks is placed the gland called the *glandula pinealis*, and has been thought by ſome philoſophers to be the ſeat of the ſoul, though modern anatomiſts have ſo far degraded it, as to make it only the penis or yard of the brain, both on account of its ſituation, and probably as it ſeems to be of no other uſe than to ſeparate a little clear lympha from the arterial blood.

Between the buttocks, and near this little gland, there is a ſmall chink, to which ſome have given the name of *anus*; others have called it the *vulva*.

Whether it has obtained this appellation in derision of the other, is not material.

As for the ventricles of the brain, which by ſome have been reckoned four, by ſome three, and by others but one, we ſhall not trouble our reader about the number, but only take notice that they are ſituated in the middle of the brain, reaching forward towards the noſe, and downward towards its bottom, in ſhape of a half-moon. The uſe of theſe ventricles is, according to the lateſt enquiries in anatomy, to ſerve as a receptacle for that portion of the ſerum which is ſeparated from the glandulous ſkin that inveſts them, and from the glandula pituitaria, and is thought to be again imbibed by the veins, and by them conducted afreſh into the maſs of blood. They are likewiſe thought of uſe to give a free paſſage to the blood in thoſe channels called the *plexus choroides*, that run along their ſides, which probably might be too much compreſſed by the great weight of the brain, had not nature found out that free and eaſy ſituation for them.

Beſides thoſe parts already deſcribed, there are to be found in the brain the fornix, ſeptum lucidum, and the corpus calloſum.

We have already taken notice of the corpus calloſum, as being the inner ſubſtance of the brain, which is diſtinguiſhed from the cortical part that involves it by its whiteneſs, &c. The ſeptum lucidum is only that partition which divides the ventricles and the fornix, is a kind of vault or arch which riſes between the brain and the

the medulla oblongata, and ſerves to bear up the upper part of the brain, that it may not preſs too hard upon the ſubjacent parts.

Now, as to its action and uſe, it is very certain, the brain, according to the philoſophers' terms, is the chief ſeat of the animal faculty, as the heart is the fountain of the vital; the animal ſpirits being prepared from its parenchyma, or marrowy ſubſtance, and from thence conveyed into the nerves, which communicate ſenſe and motion to all parts of the body.

Theſe ſpirits are firſt of all formed out of the vital, or, in other words, out of the arterial blood, which is conſtantly ſent by the heart to the brain, where there are innumerable twigs diſperſed, not only through its cortical or greyiſh ſubſtance, but alſo through its white and medullary ſubſtance; ſome of which twigs ſpring from the plexus choroides and rete mirabile above deſcribed, and others immediately from the carotids themſelves. The ſuperfluous ſerum is ſeparated by the glands, and that portion of the blood which is not changed to animal ſpirits, is taken up by the veins and returned from whence it came. As ſoon as thoſe ſpirits are elaborated, or, rather, as ſoon as the blood has undergone ſo many different modifications and changes in the capillary or hair-like veſſels of the brain, as to render its particles fine enough to paſs through the inner medullar ſubſtance, they then enter thoſe fibres which compoſe it, and ſeem to be no other than a large bun-

dle of tubuli, or little pipes, which (if the comparifon may be uſed) ſomewhat obſerve the ſame œconomy with thoſe of the kidneys, which paſs from the external glandular part to the carunculæ papillares. Theſe little particles, or rather ſpirits, are conveyed by the tubuli to the upper proceſſes of the medulla oblongata, viz. the corpora ſtriata, nates, teſtes, &c. and are there emptied into the nerves, whoſe inner ſubſtance is white and fibrous, like the medulla from whence they ſpring.

After this ſhort account of the formation of the animal ſpirits, the next thing that occurs is, in what manner they become the inſtruments of ſenſe and motion. In order to give the reader a general idea of this, it will be neceſſary, in the firſt place, to conſider the ſubſtance of a nerve, which is very ſolid and compact, proceeding, by a kind of gradation, from that of the brain; for, as the corpus calloſum, or inner ſubſtance of the brain, is more firm than the cortical part, ſo a nerve is, even at its origin, ſome degrees beyond that in ſolidity; by which means it is the more adapted to its peculiar functions.

Beſides the ſolidity and compactneſs of the nerves, their tenſeneſs is alſo a great means of their action; for as the blood-veſſels, which have no other ſenſe but what is borrowed from them, and as their office is only to carry vital ſpirits for the common nouriſhment of the body, as theſe are therefore branched off in many circumvolutions and turnings, and are formed irregularly into ſuch meanders

meanders as we obſerve in brooks and rivulets, and as ſome branches are ſent upward and others downward, as is neceſſary in order to their ſeveral functions, ſo the nerves, on the other hand, as they take their origin from the head and ſpine, are detached from thence into all parts of the body, in ſuch manner as they may be every-where braced as ſtrait as the ſtrings or cords of an inſtrument; by which means they have a free and uninterrupted undulation, and, as in all their branchings, they are ſcarcely at all contorted, but for the moſt part, form complete and perfect angles, the ſaid undulation being communicated as entirely to their origin, as if their courſe was directly ſtreight from it.

Therefore as the nerves are of a very compact and ſolid form, and can be braced and extended in ſuch manner as has been obſerved, and conſequently endued with elaſticity, they muſt eaſily and ſuddenly communicate all ſenſations to the imagination, there being no part of the body which does not participate of ſome little fibrillæ, or threads detached from them; or, according to ſome, there being no part of the body which is not more or leſs adapted to receive the nervous juice; by which means a cloſe and intimate correſpondence is kept up with the nerves. So that when an animal body is touched on any part, it is preſently ſenſible of that touch, by virtue of a communication which they keep between the head and all parts of the body.

As to motion, to which the nerves are equally ſubſervient, it is termed *voluntary* in a man, and

*ſpon-*

*ſpontaneous* in a brute creature, as the one is ſaid to act by the determination of the will, and the other by inſtinct; but this is not material, ſince both are ſaid to be produced by the determination of the animal ſpirits; for when any creature goes to move, the ſpirits are thought to be detached in a more than ordinary quantity into thoſe parts which are to be put in motion. And as the arterial blood always accompanies the ſpirits, and is equally determined with them, the muſcles are thereby filled or emptied, according as the will or inſtinct directs, as we ſhall ſee more fully hereafter.

But before we leave this ſubject, it may perhaps be expected we ſhould give ſome account of the nature of thoſe ſpirits which are ſaid to flow in the nerves, and are reckoned the principal cauſe of action in them. To ſatisfy thoſe who have a curioſity that way, we ſhall in brief tak notice, that theſe are thought by ſome to be of a viſcous and clammy nature, though compoſed of very fine particles; and this ſort of compoſition is ſuppoſed to be agreeable to that elaſticity and ſpringineſs which is obſervable in the nerves. Others have denied any ſuch thing as a juice to be in the nerves; becauſe, when a nerve is cut aſunder, there is no viſible bore or cavity in it, neither are there any poruli, or little interſtices, perceivable in it. But it is very certain, according to the common and unalterable laws of nature, whereby all bodies are made up of parts, and theſe alſo made up of other parts, they muſt therefore have interſtices, though imperceptible; and

and that juice which flows in them, whether between thoſe interſtices only, or any other way, though it be alſo imperceptible, yet it is that which we not improperly denominate the *animal ſpirits*. Though we can ſay but very little more than this, that it is the moſt ſubtile of all the juices which are to be met with in an animal body, and therefore the beſt ſuited to the ſervices for which it is appointed.

## *SECT. XXI.*

### OF THE RISE AND PROGRESS OF THE NERVES.

BESIDES the nerves, which ariſe from the vertebræ of the neck, back, and loins, there are nine pair which take their origin immediately within the ſkull.

The firſt are thoſe which go to the noſe, and are therefore called the *olfactory nerves*, and by ſome the *mamillary proceſſes*, becauſe they are round at the end, like a pap. They riſe from the ſhanks of the medulla oblongata, between the corpora ſtriata and the chambers of the optic nerves, from thence running along the bottom of the brain; after increaſing and growing broader, they are divided into a great many twigs, which receive outer coats from the dura mater, having only before a ſingle integument from the pia mater. Many of theſe twigs paſs through the holes of the

ſieve-

ſieve-like bone to the noſe, where they help to compoſe the organs of ſmelling.

The ſecond pair are the optic or eye nerves; theſe riſe a little behind the former, out of the medulla oblongata; at their riſe they are ſomewhat ſoft, being only covered with the pia mater; but as ſoon as they reach the dura mater, they become clothed by it, as the olfactory nerves before deſcribed. This outermoſt coat conſtitutes the ſclerotica or horny tegument of the eye; and from the pia mater proceeds the next coat of the eye, called the *uvea*, from its reſemblance to a grape in colour; and laſtly, the marrowy ſubſtance forms the retina, or net-like, which by ſome is called its third coat.

The third pair are called the *eye-movers*; theſe ariſe from the bottom of the medulla oblongata; at the riſe they are united, which is the reaſon why ſome believe, when one eye is carried towards any object, the other is alſo directed towards the ſame; as the optic nerves paſs through the firſt hole of the wedge-like bone, theſe paſs through the ſecond, until they come to the muſcles of the eye where they are diſperſed; by their actuating the muſcles, the ſeveral motions of the eye are performed.

The fourth, or pathetic pair; theſe take their riſe different from all the reſt, viz. from the top of the medulla oblongata, behind the nates and teſtes, and paſſing along the ſide of the medulla, are afterwards hid in the dura mater, until they reach

reach the hole through which the laſt pair paſs, which they accompany, until they are inſerted in the trochlear muſcles of the eyes; theſe are called by Dr. Willis the pathetic nerves, which move the eyes in all paſſions and affections.

The fifth pair take their beginning in a horſe a little below the former, though in a human ſubject they ſeem to ariſe from the cerebellum. Theſe are made up of a bundle of fibres gathered together, ſo that they appear to be a number of nerves ſpringing from one common origin, which ſend out branches into all parts of the head, viz. to the eyes, the palate of the mouth, the noſe, but chiefly to the lower jaw. The temporal muſcles, and muſcles of the face, and ſome branches which go downwards, inoculating with the ſixth pair, conſtitute the root or firſt trunk of the intercoſtal pair. It is owing to the ſeveral branchings and inoculations of theſe nerves following, that there is ſo great a ſympathy and conſent among all thoſe parts where they take their progreſs.

The ſixth pair inoculate with the fifth, after they have paſſed ſingly through the ſame hole of the ſkull, and been hid ſome time under the dura mater; after which they ſend back ſome branches, which conſtitute the beginning of the intercoſtal nerves. Each of theſe are divided near the orbit of the eye into two, one being ſpent on that muſcle of the eye, which draws it outwards; the other, on that which is only proper to brutes, called the *ſeventh muſcle*.

The ſeventh pair are the auditory nerves; theſe in a human head take their riſe from under the annular proceſſes of the cerebellum, but in a horſe, from the ſides of the oblong marrow. They have two proceſſes, one of which is ſomewhat ſoft, and is carried through the hole of the os petroſum, into the cells of the ears, which it clothes with a very fine membrane, and by which the ſounds are conveyed into the common ſenſory; the other is ſaid to conduce chiefly to motion, ſending forth ſeveral ſlips to the tongue, lips, mouth, and noſe, actuating the outward organs of the voice; others take their courſe to the muſcles of the forehead and eye-lids; and ſome to the muſcles of the ears, aſſiſting a horſe in moving his eyes and ears upon hearing or ſeeing any thing that is aſtoniſhing to him.

The eighth pair is generally termed the *par vagum*, or wandering pair, becauſe they inoculate and keep up a communication with the branches of many other nerves, and are diſtributed, not only to the head, but alſo into many other parts of the body, particularly to the heart, the lungs, and ſtomach, as alſo to all the other viſcera in the lower belly.

The laſt pair are reckoned only branches of the fifth and ſixth, becauſe they take their origin from ſome of their recurring branches. This pair has alſo ſeveral inoculations, and are formed with other branches into ſeveral plexuſes, as thoſe laſt deſcribed, but not ſo numerous. They take their courſe chiefly to the meſentery and

and loins, ending towards the fundament, in ſeveral ſmall twigs.

Having deſcribed the nerves, which take their origin within the ſkull, we proceed in the next place to thoſe which derive their beginning from between the joinings of the neck, back, and loins, which ſhall, in a manner, be but juſt named, they being in number thirty-ſeven, whereof ſeven ariſe from the neck, ſeventeen from the back, and thirteen from the loins and os ſacrum.

Thoſe of t e neck are all of them diſperſed, partly on the muſcles of the face, partly on the muſcles of the neck itſelf, and partly on thoſe of the ſhoulders and fore-legs; only it is to be remarked, that a twig from each nerve of the fifth pair, being joined with the like twigs of the fourth and ſixth, compoſe that remarkable nerve which goes to the midriff, called the *nervus phrenicus*.

The firſt two pair, which ariſe from between the vertebræ of the back, communicate with the lowermoſt of the neck, ſending forth ſome twigs to the neck and ſhoulders. The ſecond, as alſo all that follow, ſend each of them a twig to the intercoſtal nerve, or nerve of the ninth pair, their other branches being chiefly ſpent on the intercoſtal muſcles, and muſcles of the back, with ſome ſmall ſlips towards thoſe of the lower belly.

As theſe are chiefly diſperſed among the muſcles of the back, the intercoſtals, and the muſcles of the lower belly, ſo thoſe of the loins, and thoſe

alſo which ſpring from the os ſacrum, are diſperſed into the muſcles of the loins, hips, and hin-legs, only that the anterior, or fore-branches of the firſt pair of the loins, are ſpent on the fleſhy part of the midriff and muſcle pſoas, and the poſterior branches on the muſcle, called the *longiſſimus dorſi*.

The yard of a horſe, and the womb of a mare, are alſo furniſhed from the anterior branches of the loins, and teſticles from the anterior branches of the os ſacrum, ſent off to them from the fore-part of the thigh.

## *SECT. XXII.*

### OF THE EYES, AND THEIR SEVERAL PARTS.

EVERY one knows that the eyes are the organs or inſtruments of ſeeing, the ideas of all outward objects being conveyed by them to the common ſenſory.

They are of a convex globular figure, incloſed within their proper lids, which is an orbit, or ſocket, made for that purpoſe out of the bone.

The eye-lids, of which we ſhall firſt take notice, ſerve as a ſafeguard to preſerve them from duſt, and other external injuries. They are compoſed of the ſkin, fleſhy pannicle, and muſcles, which are all wrought into an exquiſite fineneſs; the inner membrane, which is very ſmooth, that the eye may

may move the more eaſily under it, is a production of the pericranium; the extremities, or edges, are hard and griſtly, partly to help their action, and partly that they may meet cloſe together. As to the fat which lies among the muſcles, it is of the ſame uſe as in moſt other parts, viz. to keep the eye moiſt, and eaſy in its motion.

The eye itſelf is compoſed of three humours, and four tunicles.

The firſt of its tunicles is called *adnata*; it ariſes from the pericranium, and is ſpread all over the white of the eye, by which means it keeps it firm in its orbit or ſocket. It is of exquiſite ſenſe, and very full of blood-veſſels, which are perceivable at all times, but eſpecially when the eye has received any hurt.

The next, which is the firſt of its proper coats, is called the *ſclerotica*, from its hardneſs. It ariſes from the dura mater, being opaque on its hind-part, but clear and tranſparent, like horn, on its fore part, from whence it obtains another name, and is called the *cornea*.

The third, called *choroides*, from its reſemblance to the chorion, which incloſes the fœtus in the womb. This ariſes from the pia mater, as it alſo forms the innermoſt coat of the optic nerve. It is black on its inſide, and open on its fore-part the whole breadth of the pupilla. The fore-part of this coat is alſo diſtinguiſhed from its back-part, by the name of *uvea*, from its reſembling the colour of a grape. To this belongs the ligamentum

tum ciliare, becauſe it conſiſts of ſlender filaments, like the hairs of the eye-lids. The uſe of theſe filaments is to widen and conſtringe the cryſtalline humour, by contracting or opening the perforation of the uvea.

The innermoſt, or fourth tunicle, is an expanſion of the ſubſtance of the optic nerve, and is called the *retina*, becauſe it encompaſſeth the glaſſy humour, like a net; by a combination of the rays of light on the fine filaments of this coat, and the reflection which is cauſed by the opaqueneſs of the ſclerotica, and the blackneſs of the inſide of the uvea, all external images are conveyed diſtinct to the imagination; whereas, if the rays were not thus collected on the retina, there would be no ſuch thing as diſtinct viſion.

The humours of the eye, which come next to be conſidered, are in number three.

The outermoſt is called the *aqueous*, or watery humour, being thin and fluid, like water; it fills up the ſpace between the cornea and cryſtalline humour in the fore-part of the eye.

The *cryſtalline* is the next, ſo called from its brightneſs, being clear and tranſparent, like cryſtal; it is incloſed in the vitreous, or glaſſy humour, and is looked upon to be the chief inſtrument whereby the rays of light are collected upon the filamentous expanſion of the retina.

The laſt is called the *glaſſy humour*. It is not ſo ſolid as the cryſtalline, but exceeds both it and the watery humour in quantity; it is partly convex, excepting that cavity where it receives and ſurrounds the cryſtalline. It is not ſo bright

as

as the cryſtalline, but yet tranſparent, that the viſible ſpecies received into the cryſtalline humour, might not be reflected before they reach the retina, but ſhould be tranſmitted to it pure and unmixed.

## *SECT. XXIII.*

### OF THE EARS.

THE ear is divided into the external and internal; the external is that part which a horſe moves backward and forward at pleaſure, and is ſo well known, that there needs but little to be ſaid about it. Its uſe is partly for ornament, and partly to gather all ſounds, and tranſmit them to the internal.

The internal ear conſiſts of ſeveral parts, which are very curious, and are ſeated in the cavity of the os petroſum.

The firſt of theſe is the drum, with its cord and muſcles. The drum is a very thin and tranſparent membrane, being an expanſion of the ſofter proceſs of the auditory nerve; it is very dry, that it may the better contribute to hearing; and ſtrong, that it may the better endure loud ſounds, or any other external injuries; for if once this be broken, or any way relaxed, a deafneſs muſt unavoidably enſue.

Within

Within this membrane there is a cavity, called the *concha*, wherein are four little bones, which are bound together by a ſmall ligament proceeding from the cord of the drum. The firſt is called the *hammer*, which lies upon the ſecond, called the *anvil*. The third is named the *ſtapes*, or ſtirrup; but in a horſe it is triangular, like the Greek letter Δ. Upon the upper part of the ſtirrup the longeſt foot of the anvil ſtands. The fourth is called *orbiculàr*; it is of a round ſhape, and tied with a ſlender ligament to the ſide of the ſtirrup, where it is faſtened to the anvil.

Theſe bones are a defence to the drum, and preſerve it from being toren, or beat inward by the violent vibrations of the outward air in loud ſounds, and are thus aſſiſting to the ſenſe of hearing. When the external air beats upon the drum, it is driven againſt the hammer, which ſtrikes upon the anvil, as the anvil beats againſt the ſtirrup; and as this force is more or leſs exerted, ſo the ſtirrup opens the oval window more or leſs, and proportionally the ſound appears louder or lower.

The cavities within the os petroſum, are in number three; the firſt, wherein theſe four little bones are ſituated, is called the *concha*, from its reſembling the ſhell of a taber. When the membrane is ſtruck upon by any outward ſound, the echo is made in this cavity, as in a common drum.

There are in this cavity, divers inſtruments, whereof ſome are for pulſation, as the four little bones

bones above-mentioned; ſome are for conducting the air into the other cavities, ſuch are the two ſmall perforations, called the *windows;* and a third ſort are thoſe by which the pituitous matter, collected within its cavity, is diſcharged toward the palate and noſe.

The firſt of theſe two perforations being the uppermoſt and largeſt, is from its figure named the *oval window*, which is kept ſhut next the concha, by the baſis of the ſtirrup, as often as the ſound ceaſes. The other, which is round, is always open, having no covering, and is divided by the os ſquammoſum into two pipes, one of which tends to the cochlea, the other into the labyrinth.

The labyrinth, which is the ſecond cavity, by its ſeveral turnings and windings, which are ſomewhat circular, modulates the ſounds in ſuch manner as they may be leiſurely communicated to the auditory nerve, which is diſperſed through the membrane that inveſts this cavity. There are, beſides the two windows which open into this cavity, one perforation which opens out of it into the inner cavity, called the *cochlea*, into which the air paſſes, after it has been agitated in this cavity and the concha. Beſides theſe, there are four other ſmall holes for the ingreſs of the nervous fibres, that are inſerted on the membrane, which clothes it.

The *cochlea*, which is the third and innermoſt cavity, is ſo called from the reſemblance it has

to a ſnail's ſhell, eſpecially in its ſpiral windings; it is far leſs than either of the former, but inveſted, as the others are, with a thin membrane, into which alſo the ſlender fibres of the auditory nerve do enter. This cavity is filled with the internal inbred air, as well as the former, by which the echo is made to the impulſe of the external air upon the tympanum. And the auditory nerve being extended upon the membrane, which lines all thoſe cavities, it is ſuddenly affected therewith, whereby it comes to be communicated to the original of the nerves, where all ſounds are diſtinguiſhed.

## *SECT. XXIV.*

### OF THE NOSE AND MOUTH.

AS the ear is made up of parts, whereof ſome are external, and ſome internal, ſo the noſe is alſo compoſed of the like parts.

The external parts of the noſe are made up of ſkin, muſcles, bones, cartilages, and veſſels of all ſorts.

The ſkin is extremely thin, and without fat, and adheres ſo faſt to the muſcles and griſtly part, that it can hardly be ſeparated from them.

The bones, which make up its cavities, are ſome of them common to it and the forehead, and ſome proper to the noſe only. The griſtles are in number

ber five, which will be treated of hereafter with the bones.

The veſſels of the noſe are, veins from the jugulars, arteries from the carotids, and nerves from the third pair, beſides the olfactory nerves, which are proper to it.

It is lined on its inſide with a fine membrane, which takes its riſe from the dura mater. There are on the back part of this membrane, abundance of little kernels, which ſeparate a great part of the moiſture which comes from the noſe. It has alſo another membrane, called its *muſcular membrane*, which is ſaid to contract and draw together the noſtrils.

On the upper part of the noſe is ſeated the os cribriforme, or ſieve-like bone, which is perforated in many places, that the ſmall twigs which ſpring from the mamillary proceſſes, may have a free paſſage through it into the inſide of the noſe, ſerving there to be the immediate organs of ſmelling.

As the ear is formed in ſuch manner as to collect and gather together all ſounds into its cavity, ſo the noſe is likewiſe adapted to gather into it all ſmells; which ſenſation is performed in this manner. The effluvia, which fly off from all odoriferous bodies, being carried in the circumambient air, are communicated to all creatures as often as they draw in their breath at the noſtrils, but more to a horſe than to many others, by reaſon he ſucks in moſt of his breath that way. As ſoon as theſe effluvia, or odoriferous particles, are got

within the noſe, thoſe little branches of the olfactory nerves, which are ſpread all over its inſide, are immediately affected therewith, and immediately communicate that ſenſation, whether it be grateful or unpleaſant, to the common ſenſory, where it is diſtinguiſhed.

Thus the noſe is not only uſeful, as it helps all creatures to diſtinguiſh that which is proper for their food, from that which may be hurtful to them, as it is the chief inſtrument of that inſtinct, but it is alſo uſeful to diſcharge a quantity of excrements from the blood.

We come now to the mouth, which is the laſt thing to be conſidered under this diviſion, and is generally divided into that which is called external, and that which is termed internal.

The lips are its external, or outward parts, which are alſo divided into the upper and under. Theſe are compoſed of a ſoft fungous ſubſtance, as alſo of ſome proper muſcles covered on their outſide with ſkin and hair, but on the inſide with a membrane common to the mouth and ſtomach.

The uſe of the lips are to gather in hay or oats, or other food, and to retain it while it is chewing; they likewiſe ſerve to keep the gums and teeth from external injuries.

The parts of the mouth are ſome of them fleſhy, and others bony. The fleſhy parts are the lips laſt deſcribed, as alſo the muſcles of the cheeks and lower jaw. The bony are the upper and lower jaw, together with the teeth.

All

All theſe parts, excepting the teeth, are covered or lined with a pretty thick membrane, which, in the palate, is rugged and knotty, by reaſon there are a great number of ſmall glands lie under it, out of which part of the ſlaver is ſeparated into the mouth.

The parts contained within the mouth, are the teeth, the os hyoides, or bone of the tongue; beſides which, there are the gums, palate, uvula, and kernels (called the *almonds* of the *ears*) the tongue, and its muſcles.

The gums are compoſed of a fleſhy ſubſtance, deſtitute of motion, that ſo the teeth might the better be faſtened in their ſockets.

The palate, ſo called from its being fenced, or paled in with teeth, forms the upper part of the mouth. It extends from the back part of the mouth to the fore-teeth, but is not ſo hollow in a horſe as in human ſubjects; it is compoſed of eighteen bars, and conſiſts of bones and peculiar glandulous fleſh, which are covered with a thick coat, full of perforations, or little holes, that afford a paſſage to the ſlaver, which is ſeparated from the glands above-mentioned.

The uvula is a red fungous kernel, ſomewhat long, ſeated at the back part of the palate, where the internal paſſage of the noſe opens into the mouth, hanging downward, with a ſmall but blunt end over the chink of the larynx.

The uſe of the uvula is to moderate the coldneſs of the air before it paſſes into the lungs, and to hinder any thing from falling into the wind-

pipe.

pipe. In a horſe it is of other uſes, as it hinders the water from going into the noſe when he drinks. When this is much relaxed, it prevents the food from paſſing into the gullet, and makes it apt to return into the noſe.

In deſcribing the tongue, we need ſay nothing as to its figure, it being ſufficiently known to every one. It is covered with two membranes, the outward clothing only its upper part, being alſo very porous. The inward membrane covers the whole tongue, and is thin and ſoft, having many protuberances bunching out of it, which are inſerted into the pores and holes of the outward coat.

It is of a fleſhy ſubſtance, having veſſels of all ſorts, viz. veins from an inward branch of the external jugulars, arteries from the carotids, and nerves from the fifth and eighth pair.

There are alſo belonging to the tongue ſeveral muſcles, by which all its motions are performed, but of them hereafter. Theſe muſcles are interlarded with a conſiderable quantity of fat, which, no doubt, ſerve ſomewhat to facilitate their action.

The uſe of the tongue is not only for taſte, but alſo to ſerve as an inſtrument to turn every thing taken in at the mouth, that it may be the more expeditiouſly chewed, and afterwards to thruſt it backward toward the ſtomach.

Underneath the root of the tongue there is a large kernel, from whence two pipes, called the

*ſaliva!*

*ſalival ducts*, ſpring, one from the fore, and the other from the hind part; theſe two are ſoon united into one, which runs toward the chin. In a horſe there are other remarkable glands that ſtand on each ſide this duct, and diſcharge themſelves into it. This pipe ends in other ſmall glands towards the frænum, or bridle of the tongue, which diſcharge part of the ſlaver that keeps the mouth continually moiſt. Beſides this duct, there are two others of the ſame uſe, which ariſe out of the kernels under the ear, called the *parotides*, and run on the outſide of the jaw-bone to the middle of the cheek, where they open into the mouth.

The uſe of the ſlaver is the ſame with the ſaliva or ſpittle in men, and ſerves continually to moiſten the mouth; and all the ſolid part of food, whilſt it is chewing, and being ſwallowed down with the aliment, it is believed, by ſome anatomiſts, to contribute to digeſtion.

TABLE

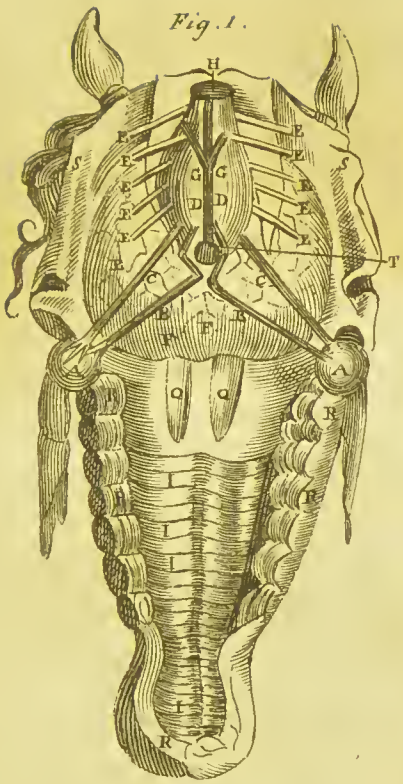
## TABLE VI.

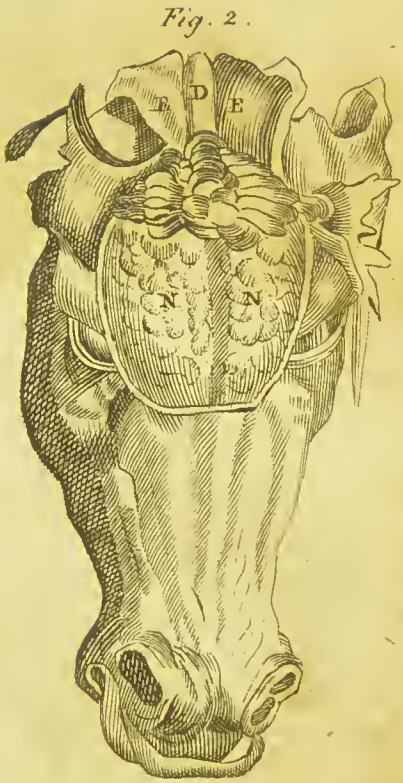
Fig. 1. *The Brain, when the upper Part of the Skull is taken off.*

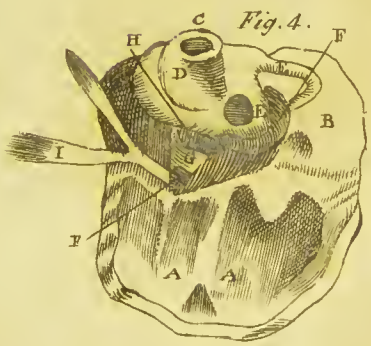
A. The ſubſtance of the brain, covered with the pia mater, only the dura mater being removed.
B. The cerebellum, or after-brain.
C. The proceſſus vermiformes, or worm-like proceſſes.
D. A portion of the medulla oblongata.
E. The dura mater, ſo far as it contains the medulla oblongata, cut aſunder and turned back.

Fig. 2. *Repreſents the under Side of the Brain and Spinal Marrow, with the Origin of the Nerves.*

A. The eyes.
B. The optic nerves.
C. The moving nerves of the eyes.
D. The pathetic nerves.
E. The other nerves ariſing within the ſkull from the ſpinal marrow.
F. The bottom of the brain.
G. The medulla oblongata, or beginning of the ſpinal marrow.
H. The ſpinal marrow cut off.
I. The bars of the palate of the mouth.






*These Figures shew the Brain when part of the Skull is taken off. (See table VI.)*

Q. The cavity that goes from the palate to the noſe.
R. The teeth.
S. The dura mater turned back.
T. The glandula pituitaria.

Fig. 3. *Shews the Bones of the Ear, &c.*

A. The inſide of the os temporis, or temple-bone.
B. The os ſpongioſum, or ſpongy bone.
C. The hole through which the auditory nerve paſſes.
D. The greater winding of the cochlea.
E. The three bony half-circles that form the labyrinth.
F. The malleus, or hammer.
G. The incus, or anvil.
H. The ſtapes, or ſtirrup.
I. The external muſcle of the ear.
K. The internal muſcle.

Fig. 4. *Repreſents the Eye taken out of the Head.*

A. The optic nerve cut off.
B. The origin of the muſcles.
C. Their ſeveral terminations into the coats of the eye.
D. The common coat of the eye, called the *adnata*, or *conjunctiva*.
E. The cornea, or horny coat.
F. The pupilla, or apple of the eye.

## SECT. XXV.

### OF THE BONES WHICH FRAME AND COMPOSE THE SKULL, WITH ITS SUTURE.

THE uppermoſt part of the head is the ſkull, called by anatomiſts the *cranium*, from its office of covering the brain like a helmet. It is compoſed of nine bones, three of which are common to it and the upper jaw, which are the wedge-like bone, the os jugale, or the yoke-like bone, and the os cribriforme, or ſieve-like bone. The other ſix are proper bones, and make up the ſkull itſelf; and theſe are the frontal, or forehead-bone, the occipital, or noll-bone, and two bones of the ſinciput, or parietal-bones, and the temple-bones, within which are contained the ſmall bones of the ear, which, with the two orbicular-bones, make up the number of ſeventeen bones peculiar to the ſkull.

The large bones are diſtinguiſhed by ſeveral ſeams, called *ſutures*, both which, and the bones, are of the ſame number in a horſe as in men, differing only in ſhape and figure.

Some of theſe ſutures are proper to the ſkull alone, and ſome are common to it and the upper jaw. They are alſo diſtinguiſhed into thoſe that are true and thoſe that are falſe; ſuch as are indented one into another, being of the firſt kind, and ſuch as are plain and linear, like two boards glewed

glewed together, being accounted of the ſecond kind, or only falſe ſutures.

The true ſutures are three in number, and proper to the ſkull only, viz. the coronal, lambdoidal, and ſagittal.

The coronal, ſo called becauſe the ancients uſed to wear their crowns, or garlands, on that part. This ſuture, as in men, ſo likewiſe in a horſe, runs athwart the ſkull above the forehead, reaching on each ſide to the temple-bone, and joining the forehead-bone to the ſinciput.

The ſecond lamdoides, becauſe of its reſemblance to the Greek letter Λ. This is ſeated on the hind part of the head, being oppoſite to the other, beginning at the bottom of the occiput, and aſcending above the ear ſomething higher than in men. It joins the bone of the occiput, or hind and under part of the ſkull, to the bones of the ſinciput and temples.

The third begins at the middle of the lambdoidal ſuture, dividing the two bones of the ſinciput, and is therefore called the *ſagittal ſuture*; but in a horſe, and many other quadrupeds, it croſſes the coronal ſuture, as in children, quite down to the noſe. This ſuture in a horſe is not ſo much indented as the other two, but is in a great meaſure ſtreight and linear.

The falſe ſutures are two in number; the firſt paſſes from the root of the proceſſus mammillaris with a circular duct, returning down again towards the ear, encompaſſing the temple-bone.

The ſecond runs obliquely downwards, ariſing from the top of the former, and paſſes to the ſocket of the eye, and the beginning of the firſt common ſuture.

The ſutures which are common to the ſkull, the wedge-like bone and upper jaw, are chiefly the three following, viz. the frontal, wedge-like ſuture, and the cribroſa. The firſt being that by which the proceſs of the forehead-bone is joined with the firſt bone of the upper jaw; the ſecond that by which the wedge-like bone is joined with the firſt bone of the ſame jaw; and the third that ſuture which is common to the wedge-like bone and the ſeptum, or partition of the noſe.

Theſe ſutures are of uſe, not only as they divide the bones which compoſe the ſkull, but alſo as they afford a free ingreſs and egreſs for the veſſels which ſupply life and nouriſhment to the parts contained within the ſkull, and likewiſe as they give a paſſage to thoſe little fibrils, by which the dura mater is kept ſuſpended. And farther, they are of uſe in caſe the ſkull ſhould at any time be broke, that any ſuch fracture or fiſſure might not run through the whole ſkull, but be ſtopped at the end of the fractured bone; whereas if it was not for theſe ſeams, it might at one blow be broke in pieces, like an earthen pot. But we will return to the bones.

The frontal, or forehead-bone, which we have already taken notice of as the firſt proper bone of the ſkull, is ſeated before, and makes the fore part

of

of the ſkull. It is bounded on its fore part by the coronal, and firſt common future, on the ſides by the temporal bones, and on its inſide by the oſſa ſpongioſa, or ſpongy bones. Between its lamina, or plates, there is a double cavity, from whence there is alſo a double paſſage into the noſtrils, diſtinguiſhed by many bony fibres and ſmall ſcales, which are encompaſſed with a green membrane, and contain a ſoft medullar or oily ſubſtance. Theſe are proportionably larger in a horſe than a man, and have various uſes aſcribed to them, being thought by ſome to aſſiſt in the office of ſmelling, by entangling the odoriferous air; by ſome to promote the ſhrillneſs of the voice; and by others, a receptacle for ſome portion of the excrementitious matter which is ſeparated from thoſe parts.

Beſides theſe cavities, there is a ſinus or den on each ſide, called the *frontal ſinuſes*, compoſed of a double ſcale, one making the upper part of the orbit of the eye, and the other forming the cavity above the eyes on either ſide, which is not very plain, having only inſcriptions anſwerable to the winding convolutions of the brain. This bone has two holes, which go to the orbit of the eye, whereby the firſt branch of the nerve of the fifth conjugation, goes to the muſcles of the forehead. It has likewiſe four proceſſes, two of which are ſeated at the greater corner of the eye, and the other two at its leſſer corner, helping to form the upper part of the orbit.

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The bones of the ſinciput are the next to the frontal, being joined to it by the coronal ſuture, and behind to the occipital-bone by the lambdoidal ſuture, on each ſide to the temple-bones, by the ſuturæ ſquammoſæ, or ſcaly ſutures, and by one of the common ſutures to the wedge-like bone. They are alſo joined one to the other, by the ſagittal, or arrow-like ſuture.

Their figure is ſomewhat ſquare, and though their ſubſtance is thinner than that of the other bones of the ſkull, yet they are alſo made up of two lamina, excepting where they are joined to the temple-bones. They are ſmooth on their outſide, but inwardly uneven, having ſeveral cavities to which the dura mater adheres by the ſides of the ſagittal ſuture; as alſo ſeveral long and winding inſcriptions, or furrows, formed by the branches of the internal jugulars, in their paſſage to the brain. Theſe bones have alſo ſeveral perforations, ſome of which go quite through, others piercing only the upper table for the enterance of thoſe veſſels which run between its plates.

The occipital, or noll-bone, which makes the hinder and lower part of the head, and middle of the baſis of the ſkull, is the hardeſt of all the bones of the ſkull, excepting the os petroſum of the temple-bones, being very thick at bottom, where the two ſinuſes of the dura mater are joined. At the ſides of the great perforation through which the ſpinal marrow deſcends, it is ſomewhat thin; but that its thinneſs may be no prejudice to it, it is ſtrengthened by a large prominence, which aſcends

aſcends from the ſaid perforation quite to its upper part. By this prominence, the two protuberances of the cerebellum are diſtinguiſhed.

This bone is in a horſe five-cornered, and has ſeveral channels, or ſinuſes, two of which being large, receive the protuberances of the cerebellum, or after-brain; others receive ſome of the convolutions of the brain itſelf, and ſome the two ſinuſes of the dura mater, that they might not be compreſſed or hurt for want of a proper cavity to lie in.

It has alſo divers proceſſes, four of which being covered with a ſmooth griſtle, are received into the ſinuſes of the firſt vertebra of the neck; but that which goes between the protuberances of the cerebellum, is the moſt conſiderable. It is perforated in five places for the paſſage of ſeveral veſſels, beſides the large hole through which the medulla goes into the ſpine of the neck.

The laſt of the proper bones of the ſkull are the temple-bones, which are ſeated on each ſide of the head, reaching to the bottom of the ears. Their figure is on their upper ſides ſemicircular, but below they are rugged and unequal, like a rock; from whence, and from their hardneſs, the temple-bone has alſo obtained the name of os petroſum. Theſe bones are very thick at their bottom, but grow extremely thin upwards, lying like two ſcales on the lower edge of the bones of the ſinciput.

They have each of them two ſinuſes; the outermoſt, being the largeſt, is lined with a griſtle, and receives

receives the longeſt proceſs of the lower jaw. The other, or inward cavity, is common to the temple and noll-bones. There are four proceſſes belonging to each temple-bone, viz. that which in man is called the *proceſſus ſtyloides*, or pen-like proceſs, though improperly in a horſe, it being but ſhort. The next is called the *proceſſus mammillaris*, being ſomewhat ſhaped like a nipple. The third paſſing forward from the hole of the ear, to the protuberance of the firſt bone of the upper jaw, and being joined to the laſt, forms the os jugale, or yoke-boke. The fourth is the proceſſus petroſus, or hard and uneven part of the temple-bone; this being internal, juts out a great way into the inſide of the bottom of the ſkull, within which there are two perforations; one to give a paſſage for an artery, and another for the auditory nerve into the inner cavities of the ear, viz. the tympanum, labyrinth, and cochlea.

This proceſs has on its outſide three perforations, or holes; the firſt is called the *meatus auditorius*, or auditory paſſage. The ſecond is that from which the jugular vein enters into the inner cavities. The third is ſeated between the mammillary and ſtyloid proceſſes, ending in that paſſage which goes from the ear to the mouth. As to the little bones that are contained in the cavities of this proceſs, viz. the incus, malleus, ſtapes, and os orbiculare, which, with thoſe already deſcribed, make up the whole number of bones proper to the ſkull, having taken notice of them already in another place, we ſhall paſs on to thoſe which

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are common to the ſkull and upper jaw, which are three in number, viz. the os ſphenoides, or wedge-like bone, the ſieve-like bone, and yoke-like bone.

The *wedge-like bone* is ſo called from its being placed like a wedge between the bones of the ſkull and upper jaw; it is joined before to the frontal-bone, and behind to the occipital, its ſides to part of the petroſum, above and below to ſome of the bones of the upper jaw and palate.

It has ſeveral proceſſes, both external and internal; as alſo divers cavities, two of which are common to it, and the temple-bones, and the bones of the ſinciput. Its holes are about ſeven on each ſide; one of which gives a paſſage to the optic nerve, the reſt are penetrated, ſome by one, and ſome by ſeveral pair of nerves; others by the carotid arteries and jugular veins; and again, others both by nerves and blood-veſſels.

The *os cribriforme* is the next bone common to the head and upper jaw, and is ſo called from its innumerable little holes, which make it like a ſieve. It is ſituated in the fore and under ſide of the ſkull, between and a little below the ſockets of the eyes, and at the upper part of the noſtrils, and is joined by an even line to the forehead-bone, the ſecond of the upper jaw, and the wedge-like bone.

It is made up of four parts, viz. the criſta galli, or cock's comb, to whoſe ſharp appendix the falx adheres. The ſecond part is that which is perfo-

rated, and makes up the greateſt portion of it. The third is only a proceſs on its under ſide, by which the noſtrils are divided. And the fourth is called the *os ſpongioſum*, its cavities being filled with a ſpongy ſort of fleſh. This bone helps to make up the inner corner of the orbit of the eye, and through its holes gives a paſſage to the innumerable fibrillæ of the auditory nerves.

The laſt is the jugale, or yoke-like bone, and is compoſed of two bones; one of which is a proceſs of the temple-bone, and the other a proceſs of the firſt bone of the upper jaw, forming the lower ſide of the leſs or outer corner of the orbit of the eye.

## *SECT. XXIV.*

### OF THE JAW-BONES AND TEETH, TOGETHER WITH THE OS HYOIDES, OR BONE OF THE TONGUE.

BESIDES the bones which are common to the ſkull and upper jaw, there are twelve, viz. ſix on each ſide, which are proper to the upper jaw alone, and are thoſe which frame the lower ſide of the orbit of the eye, noſe, cheeks, and roof of the mouth.

The firſt is called *zygomaticum*, becauſe its proceſs makes up part of the os jugale; it compoſes the lower part of the outer corner of the eye.

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The next is ſeated in the inner corner of the orbit of the eye, and is called *lachrymale*, becauſe it has in it a cavity which contains the lachrymal gland. This bone has alſo a perforation into the noſtril, through which a nerve of the fifth pair paſſes to the inner membrane of the noſe.

The third is ſeated in the inner ſide of the orbit of the eye, and is continued with the fungous bones of the noſtrils. This bone is joined to four others, viz. the forehead-bone, wedge-like bone, to the laſt deſcribed, and the next following, and are not diſtinguiſhed by any particular name.

The fourth is called the *os malæ*, or cheek-bone. This bone compoſes the greateſt part of the cheek, as alſo of the palate, and contains all the upper teeth in its leſſer caverns. It is much the largeſt of all the bones of the upper jaw, and is circumſcribed with divers ſutures, being joined above to the frontal-bone on the ſide next the noſe, below to the wedge-like bone, and the bone of the palate of the mouth, before to the lachrymal bone, and one of thoſe bones that make the upper part of the noſe, as alſo to the cheek-bone on the other ſide. It has three perforations, two of which are under the orbit of the eye, for the paſſage of two branches of nerves that are beſtowed on the face; and the third for the paſſage of a vein and artery, which go to the noſtrils. This bone has likewiſe a great den or cavern on each ſide, in that prominent part which ſtands out under the orbit of

the eye, and on each ſide the noſe; when there happens to be matter pent up in this cavity, it occaſions intolerable pain, by reaſon of a very fine and ſenſible membrane which lines its inſide.

The fifth bone of the upper jaw, with its companion, make up the bony prominence of the noſe. It is hard and ſolid, and perforated in ſeveral places for the paſſage of nerves and blood-veſſels. It is joined above to the internal proceſs of the frontal-bone. Its ſides adhere to the firſt and fourth bone of this jaw, in the middle to its companion, and underneath to the griſtles that make the lower part of the noſe.

The laſt is that bone which, with its companion, frames the roof of the mouth. It is broad, thin, and ſolid, but ſomewhat rough and uneven at that end where it reſembles a ſemicircle. It is joined behind the wing-like proceſſes of the wedge-like bone, and on the inſide to the partition of the noſtrils. It is alſo joined to the cheek-bone, and to its own fellow at its back part. It has likewiſe two perforations, one on each ſide, which have communication with the two holes of the wedge-like bone.

The lower jaw, which makes the lower part of the capacity of the mouth, comes next to be treated of. This differs from the former, in that it is moveable, the other not ſo. At both ends of it there are two proceſſes, the foremoſt of which running upwards, and from a broad baſis growing ſharp, ends in a cone or point. It is this

point

point that receives the tendon of the temporal muſcle; from whence it is that a luxation of the lower jaw is very dangerous, if not ſpeedily reduced.

The other, which is the backward proceſs, is called *articularis*, having a neck and a longiſh head covered with a griſtle, by which it is received and articulated into the ſinuſes of the os petroſum, and is ſtrongly knit thereto by a membranous ligament. It has at the ſides of thoſe proceſſes, ſmall ſhallow cavities, for the lodgement of its muſcles. Towards its back part it has a cavity within it, which contains a marrowy juice for its nouriſhment. It has four perforations, or holes, whereof two are at the roots of the proceſſes, by which a vein and artery, as alſo a branch of the fifth pair of nerves, paſs to the teeth. The other two are in its fore-part, giving way to two twigs of the ſaid branch, which go out to the lower lip.

Both the lower and upper jaw have ſockets for the teeth to ſtand in, which, by reaſon of their depth, have been called *alveoli*. When any of the teeth fall out, as the foal-teeth, &c. theſe pits ſoon become obliterated, and the jaw grows ſmooth.

The teeth are of a ſubſtance harder than any of the other bones, which is abſolutely neceſſary, conſidering their office is to break and cut all the aliment. That part of them which ſtands out above the gums, is ſmooth, and free from any covering, but all within the ſockets of the jaws is

more

more rough, and covered with a thin membrane of exquiſite ſenſe. Thoſe which are called *grinders*, have a manifeſt cavity within them, but the fore and dog-teeth, have but very obſcure ones. By the ſmall holes which are diſcernable in the roots of the teeth, is conveyed into theſe cavities a capillary branch of an artery from the carotids, a ſmall vein from the jugulars, and a twig of a nerve from the fifth pair; which being expanded through the thin membrane that inveſts the ſaid cavity, is partly the occaſion of that exquiſite pain which is felt in the tooth-ach. Theſe veſſels before-mentioned, viz. the vein, artery, and nerve, are incloſed in one common capſula, or ſheath, when they enter the jaw, and running along a proper channel under the roots of the teeth, ſend off to each of them, in their paſſage, thoſe ſmall twigs aforeſaid.

Though the teeth of horſes are differently ſituated from thoſe in men, and are more numerous, yet, as to their offices, they admit of the ſame diviſion, and are of three kinds, viz. the inciſores, canini, and molares.

The inciſores, cutters, or ſhredders, are thoſe we call the fore-teeth, being ſeated in the fore-part of the jaw. They are broad, and ſharp-edged, the better to crop and bite off the graſs. They are twelve in number, ſix on each ſide. Theſe have but one root, or fang.

The next are the canini, or dog-teeth, which, in horſes, are called the *tuſhes*; and are of uſe

to

to break whatever is too hard for the fore-teeth to cut or ſhear aſunder. Theſe have but one fang, and are ſeldom found in mares.

Thoſe of the third rank are the double teeth, named *molares*, or grinders, becauſe they grind the corn like a millſtone. They are twenty-four in number, twelve on each jaw; their ſeat is in the inner part of the mouth, being environed on their outſide by the cheeks, to prevent the food falling out of the mouth while it is grinding. Theſe have ſeveral aſperities on their upper part, by which means they are rendered more fit for their peculiar office.

The two foremoſt of theſe teeth, which ſtand next the tuſhes, are thoſe by which a horſe may be known to be under ſeven years old, having till then, ſeveral thin ſhells or ſcales growing round the outſide of the top of them, forming a hollow in the middle. It is to be obſerved, that the nearer a horſe comes to that age, the more thoſe edges are wore down, till at laſt they become even with the reſt; ſo that the age of a horſe is no longer to be known by that ſign.

The ſeveral periods of a horſe's age, while only a colt, are alſo diſtinguiſhable by the fore-teeth; but theſe things being ſufficiently known by every perſon who has been uſed to horſes, we ſhall proceed to the bone of the tongue, which is called *os hyoides*, from its ſhape, being like the Greek letter *υ*. It is ſeated at the root of the tongue, being the foundation or ſupporter of it. It is made

made up of three bones, the middlemoſt being gibbous outward, but inward ſomewhat hollow. The other two are called its *cornua*, or horns, and are all tied to the adjacent parts, by a ſubſtance which is partly nervous, and partly fleſhy.

This little bone is of great uſe, all the muſcles that move the tongue being either inſerted into it, or taking their origin from it. It alſo gives riſe to ſome of thoſe muſcles that move the larynx, or throttle, and is a reſting place to the epiglottis, or throat-flap, when it is lifted up in breathing.

## *SECT. XXVII.*

### OF THE VERTEBRÆ OF THE NECK.

THE neck is made up of ſeven vertebræ, or rack-bones, reckoning from the head downward, that next the head being firſt; they have each of them a large cavity, to give way to the ſpinal marrow. Beſides this large hole, which they have in common with all other vertebræ, they have each two ſmall perforations in their tranſverſe proceſſes, through which the cervical veins and arteries paſs to the head; and between their joinings there is a third found, partly out of the lower ſide of the upper vertebra, and partly out

out of the upper ſide of each lower vertebra, by which the nerves paſs outward from the ſpinal marrow.

The firſt of theſe bones in a human ſkeleton, is called *atlas*, becauſe the head is articulated to it; and, as it were, ſupported by it; and many, therefore, retain the ſame name in a horſe. Its body is ſlender, but more ſolid than the tips of its proceſſes, which are porous and open; inſtead of its hinder ſpine or proceſs, it has only a ſemicircular prominence jutting out, leaſt the larger ſtreight pair of muſcles which paſs over it, ſhould be hurt in bending the head forward; but it has all its other proceſſes in common with the reſt. On the fore-ſide of its great foramen, inward, it has a ſmall ſocket, rather ſemicircular, and lined with a cartilage to receive the tooth-like proceſs of the ſecond vertebra.

The ſecond vertebra is, becauſe of this proceſs, called *dentata;* it is an appendix which ſprings from between its two aſcending proceſſes, long and round, its head reſembling the upper part of the dog-tooth in man, or the tuſh in a horſe. It is alſo covered with a cartilage on that part which is received into the aforeſaid ſinuſes of the firſt vertebra, upon it the head turns round, as upon a hinge.

The baſis of this tooth-like appendage, is encompaſſed with a ligament that knits it to the occiput. This and the following vertebræ have ſpines, or hinder proceſſes, each of which are divided into two, for the better connection of the

ligaments and muſcles to them, and are, in every reſpect, like the ſecond, ſave only that their lateral proceſſes are larger and divided, as well as the hinder.

## *SECT. XXVIII.*

### OF THE VERTEBRÆ OF THE BACK AND LOINS, AS ALSO OF THE BREAST-BONE, COLLAR-BONE, AND RIBS.

THE back is made up of ſeventeen vertebræ, or rack-bones, which are different, both in their bodies and proceſſes, from thoſe of the neck, the laſt being longer and more flat on their inſide, that the gullet might reſt more ſecurely on them; and as for their proceſſes, though they are equal in number, viz. two tending obliquely upward, two downward, two tranſverſe or lateral ones, and one acute hinder one, called the *ſpine*; yet thoſe which are now to be deſcribed, have their ſpines, or hinder proceſſes, ſingle and not divided, and their lateral ones more ſhort and blunt; and inſtead of the holes which are in thoſe of the neck, have only a ſhallow cavity, into which the ribs are articulated.

Neither are the bodies of theſe vertebræ of ſuch a firm and ſolid make as thoſe of the neck, though they are more bulky; beſides that, they

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are full of ſmall perforations for the admiſſion of blood-veſſels to the ſpinal-marrow, and have each two holes at their joinings, for the egreſs of the nerves which proceed from thence.

They have alſo on each ſide a ſinus, or cavity, for the inarticulation of the head of the rib, which ſinuſes are wanting in thoſe of the neck, having no communication with any other but among themſelves.

The tranſverſe proceſſes of two or three of the loweſt of theſe rack-bones, grow gradually ſhorter, and their ſpines more blunt and even, declining not ſo much downward as thoſe more forward. As for the great perforation in their middle, it is proportionable to their ſize, and the marrow contained within it.

The vertebræ of the loins, which compoſe the third part of the ſpine, come next to be conſidered. They are ſeven in number, and are larger than any of the foregoing; their hind proceſſes, or ſpines, grow ſhorter, but are broader and thicker than thoſe of the back, ſomewhat bending upward, as moſt of the others decline downward; but as to their lateral proceſſes, they exceed thoſe of the back in length. They are joined one to another by a clammy griſtle, as alſo the uppermoſt of them to the laſt of the back, and the loweſt to the firſt of the os ſacrum, by the ſame kind of articulation. Theſe have ſeveral perforations for the ingreſs and egreſs of nerves and blood-veſſels, as alſo a large cavity in each for the ſpinal-marrow.

Directly oppoſite to the upper vertebræ of the back, is ſeated the ſternum, or breaſt-bone, which is very different in a horſe, from what it is in a man, being, in all human ſkeletons, flat on its outſide, and pretty ſtreight; whereas in our preſent ſubject it is not only ſomewhat arched, but in its middle is prominent and ſharp, like the keel of a ſhip, being hollow on its inſide. This bone in foals, as in children, ſeems to be made up of divers cartilages, which, in time, become ſo united as to leave no marks of their ever having been divided.

In its upper part it is pointed and ſharp, but in its lower blunt and obtuſe, terminating in a griſtle called the *cartilage enſiformis*, or ſword-like griſtle. Its uſe is to ſerve as a ſafe-guard to the breaſt, as alſo for the articulation of the collar-bones, and the nine uppermoſt ribs, having on each ſide nine little ſinuſes or cavities for that purpoſe.

The collar-bones, which are the firſt that are united to the breaſt-bone, are two, one on each ſide; they are called *clàviculæ*, either becauſe they reſemble the ancient keys, which were in ſhape like an Italian *ſ*, or becauſe they lock up and cloſe the cheſt. Their heads are ſpongy and open, but their middle ſomewhat thin and flat, and more ſolid; by one end they are joined to the top of the breaſt-bone, and by the other to the firſt rack-bone of the back, differing from thoſe in man, which are joined with the ſhoulder.

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They help to ſupport the ſhoulder-blades, and keep them from ſliding forward upon the breaſt-bone and ſhoulder-bones, which, upon a fracture, or diſlocation of theſe bones, frequently happen.

Next the collar-bones are ſeated the ribs. They are, in all, thirty-four, viz. ſeventeen on each ſide. Their ſubſtance is partly bony, and partly cartilaginous. The nine uppermoſt are called the *true ribs*, becauſe each, with its fellow, make a kind of circle, being joined together by the mediation of the rack-bones of the back behind, and the breaſt-bone before; each rib has two knobs, one of which is received into the ſinus of the body of the vertebra, and the leſſer knob into that of the tranſverſe proceſs; they are in like manner joined to the breaſt-bone, their cartilages ending in little heads, which are received into its ſmooth ſinuſes.

The eight lowermoſt are called the baſtard-ribs, becauſe they do not circumſcribe the body, as the uppermoſt do, by their two-fold articulation into the rack-bones and breaſt-bone. They are of a more ſoft and pliable ſubſtance than the true ribs, and the nearer they advance towards the loins, they grow ſhorter, leaving an open ſpace for the ſtomach and guts, which might have eaſily been hurt by them, as often as diſtended with meat and water.

They are all rough and uneven on their outſide, eſpecially towards the back, that the ligaments, by which they are tied to the back-bones, might

might take the firmer hold, but on their inſide they are ſmooth, and covered with the pleura, leaſt they ſhould hurt the lungs, and the other parts that bear againſt them. They are alſo narrow and thick toward the back, but broader and flatter toward the breaſt, and are furrowed on the lower part of their inſide, in which ſome blood-veſſels and a nerve are conducted. They are a defence to the bowels within the breaſt, and thoſe in the lower belly.

## *SECT. XXIX.*

### OF THE BLADE-BONE, THE SHOULDER-BONE, AND THE BONES OF THE FORE LEG AND FOOT.

THE blade-bone, or ſhoulder-blade, is ſeated like a target upon the ſide of the true ribs, reaching from the vertebræ of the back, almoſt to the collar-bone. On its inſide it is concave and hollow, but arched on its outſide. It is joined to no bone, but by its lower end, where it has a cup that receives the round head of the ſhoulder-bone. It is, however, knit to ſeveral parts by the muſcles which are inſerted into it, or take their origin from it. It has three proceſſes, the firſt is that part which forms its neck, the ſecond is extended along the middle of its outſide, and is called its ſpine. The third is toward

ward its lower and inſide, and from the reſemblance it has to an anchor, is called *ancyroides*, or its anchor-like proceſs.

It has about its neck five appendages, three of which afford an original to ſome muſcles, and from the other two ariſe the ligaments by which the head of the ſhoulder-bone is tied into its cup. Round its brim there is a thick griſtle, which not only makes its cavity the deeper, that the head of the ſhoulder-bone, which is jointed into it, ſhould not ſo eaſily ſlip out, but alſo facilitates its motion.

The ſhoulder-bone has two heads, the uppermoſt inſerted into the cup of the blade-bone, and the lowermoſt joined to the upper part of the cubit, or leg-bone.

The uppermoſt head is large and orbicular, covered with a griſtle, and is, at firſt, only an appendix to the cubit; but in time becomes a proceſs of the bone itſelf; on the outſide of this orbicular head, there are two leſs prominences, into which two ligaments are inſerted; and on its inſide there is a cavity, out of which ariſes the ſtrong ligament that ties it into the cup of the blade.

The lower head of this bone, which in a human body is articulated with two bones, viz. the radius and ulna, is, in a horſe, only united to one; yet it is ſo firmly coupled to that one, that it cannot be eaſily diſplaced; for there being three proceſſes and two ſinuſes between it and the cubit,

they

they both receive and are received of each other. Beſides theſe proceſſes, which ſerve to its articulation, there is on each ſide one, from whence ariſe the muſcles which lie on both ſides of the leg. About its middle there is a perforation, by which the blood-veſſels have recourſe to, and from the marrow contained within its large bore, and are thoſe by which it is nouriſhed.

The next bone, called the *cubit*, or leg-bone, reaches from the elbow to the ſhank. This bone has, on its hinder and upper part, a notable proceſs, long and round, which enters the larger cavity of the lower head of the ſhoulder-bone, and makes that bunching-out which is uſually called the elbow. This proceſs is ſomewhat rough and uneven, partly that the ligaments that encompaſs the joint might be the more ſtrongly knit to it, and partly for the origination and inſertion of the muſcles which ſerve to move thoſe parts, for which cauſe the bone is rough at the root of this proceſs, as alſo the whole circumference of the ſinus, into which it is inſerted.

Between this and the ſhank-bone, there are two ranges of little bones, one above another, three in the firſt range, and four in the ſecond, all which are very firmly joined together. Theſe differ one from another in their magnitude, form, and ſituation, and are ſaid to be firſt cartilaginous, but in proceſs of time they grow hard and bony. Their ſubſtance is ſpongy, as are all thoſe which at firſt are only cartilaginous, of which kind are the

the appendages of bones, the breaſt-bones, &c. They are covered with a ligament which is partly membranous and partly cartilaginous, whereby they are ſo compacted, that, without dividing the ſaid ligament, it is hard to diſtinguiſh them one from another, but at firſt view they may be all taken for one bone.

On their outer ſurface they are bunching, but on their inſide hollow. The firſt that is placed on the inſide of the upper rank is ſomewhat long, and curved inward, articulated with the cubit-bone, and below with the ſecond of the lower rank, touching both the third and fourth of the ſame rank, and joined to the ſecond of its own rank. The ſecond has a cavity on its upper part, which receives an appendix of the cubit-bone. The third is joined above by a plain ſurface to the ſaid cubit-bone, and with the ſecond is joined underneath to the fourth bone of the lower rank. The fourth bone, or firſt of the lower rank, is round and ſmooth, and is joined above to the outſide of the lower part of the firſt bone, and below to the ſhank-bone. The fifth has a large ſinus on its upper part, into which the firſt bone of the upper rank is articulated, and another below for the reception of part of the head of the ſhank-bone. The ſixth is joined with a plain ſuperfices on each ſide of the ſeventh, and the foregoing above to the ſecond, and below to the ſhank-bone. The ſeventh is joined on its upper end to the third of the upper rank, and below to

the head of the ſhank-bone, and on its inſide to the foregoing, viz. the ſixth.

Theſe bones are of uſe, not only to facilitate the motion of the knee, but alſo to ſtrengthen it, for by their convex outſide, the joint can never be extended too far the contrary way, and the number of the lower rank exceeding that of the upper (as the upper end of the ſhank-bone is broader than the lower end of the cubit) and as the bones themſelves are different in their ſize from each other, like a piece of good maſon-work, they cannot eaſily be pulled aſunder; whereas, if the bones of both ranks were of one ſize and number, and their ſeams and junctures to run ſtreight through, it would be impoſſible but the leaſt falſe ſtep muſt diſorder them in ſuch a manner as to occaſion an irrecoverable lameneſs. As to their motion, although by this ſort of articulation they ſeem as if they were incapable of any ſingly, yet it is very certain the whole have a ſmall tendency inward, as often as the ſhank is bent, though that be ſcarcely diſcernable, and by virtue of the cartilaginous ligament which covers all thoſe little bones, and ties them together, they recover themſelves as with a ſpring; ſo that the motion of that joint muſt be more eaſy and quick than it could poſſibly be by any other kind of articulation.

We ſhall proceed to the ſhank-bone, which comes next in order, and is that which reaches from the knee to the great paſtern, and anſwers to the back of the hand in man. As that conſiſts of

of five bones, the ſhank-bone of a horſe is made up of three, having one much larger and longer than either of the other. It is joined, by its upper part, to the lowermoſt range of the ſmall bones, and below to the upper end of the great paſtern, by a reciprocal articulation, having two round heads, and three ſmall cavities, whereby theſe two bones both receive, and are received into each other, as the lower end of the ſhoulder-bone and the upper end of the cubit.

To each ſide of this bone is faſtened a ſplint, in ſhape like a bodkin, being thick and round at the upper end, but ſmall and pointed at the lower; between theſe run the tendons of the muſcles that move the foot.

The next is the great paſtern. This bone is gibbous and crooked on its upper part, where it is articulated with the ſhank-bone; it has three ſmall proceſſes, which are received into the cavities of the ſaid ſhank-bone; and two cavities which receive its two proceſſes; and has two ſmall triangular bones faſtened to its back part, whereon the foot-lock hair grows; theſe two bones are a ſtay to that joint, which articulation being like a hinge, would be apt to ſtrain the ligaments every time a horſe ſhould ſtumble.

The little paſtern is not much unlike the other, only that it differs in its length; its upper end is articulated with the great paſtern, and its lower end conſiſts of two heads, as that of the great paſtern, which are received into the coffin-bone,

in the ſame manner as itſelf receives the lower end of the great paſtern.

The coffin-bone, which is the lowermoſt of all the bones of the leg, is ſo called from its hollowneſs. It is ſemilunary, or half-moon faſhioned, thick upwards, where its cavities receive the lower end of the little paſtern, but thin and broad at its bottom, and toward its edges, for its more firm fixing upon the ground. Its ſubſtance is open and porous, having innumerable little holes through its ſides, for the paſſage of the veſſels; as alſo many ſmall ſinuſes, wherein are inſerted the tendons of the muſcles that move the lower part of the leg and foot.

## *SECT. XXX.*

### OF THE RUMP-BONES.

THE croupe, or the bone which lies under the crupper, otherwiſe called the *os ſacrum*, is ſeated at the lower end of the back, and adheres to the laſt vertebra of the loins above, and below to the firſt of the bones of the dock, or rump. It is much the broadeſt of all the bones of the back, of a figure ſomewhat ſingular, growing, from a broad beginning, narrow towards the firſt bone of the tail; it is hollow on its inſide, but uneven outwards, becauſe of the muſcles of the

the back and its ligaments cleaving to it. It has hardly any obliqu. proceſſes but on its firſt vertebra, and its other proceſſes are either very ſmall, or very obſcure. On each ſide, towards its edge, there are certain ſinuſes, to which the haunch-bones adhere by an intervening cartilage. It has ſix vertebræ, its ſpines grow gradually leſs the nearer they approach to the rump, as the vertebræ themſelves do. The ſpinal-marrow has a paſſage in it, as in the other vertebræ, out of which there are ſeveral leſs perforations for the egreſs of the nerves.

The rump-bone are eighteen in number, and are joined to each other by an intervening cartilage, or griſtle; but ſo looſely, that a horſe can move his tail which way he pleaſes; theſe have no hollowneſs in them, only the uppermoſt has a ſmall cavity that receives the proceſs from the laſt bone above deſcribed. They are ſoft and ſpongy, therefore the better adapted to motion, as they are alſo from their make, growing gradually leſs, till they end in a ſmall pointed cartilage.

## *SECT. XXXI.*

### OF THE OSSA INNOMINATA, DIVIDED INTO THE HIP, HAUNCH, AND SHARE-BONES.

THE oſſa innominata, are ſeated on the ſides of the os ſacrum. The firſt is called the *os ilium*, becauſe the gut ilium lies under it; it is the

the uppermoſt and broadeſt, and joined to the os ſacrum by a true ſuture; it is ſemicircular, being convex and uneven on its outſide, which is called its *dorſum* or back, and concave and even on its internal ſide, which is called its *coſta*; and that part, by which it is joined to the upper vertebræ of the os ſacrum, is called its *ſpine*, or edge.

Its ſpine is, in many places, rough and uneven, there being ſeveral muſcles that take their origin from it, as alſo from its dorſum, or back-part, which is in like manner accommodated for the ſame purpoſe.

The ſecond is called the *os pubis*, or ſhare-bone, which forms the inferior and fore-part of the oſſa innominata; it is joined to its fellow by an intervening cartilage, and forms the fore-part of that cavity, which, in human bodies, is called the *pelvis*, or baſon. It is perforated with a very large hole, and on its hinder and inner ſide has two proceſſes, from whence the cavernous bodies of the yard, and ſome muſcles, take their original.

The third is the inferior and poſterior, called the *iſchium*, or *coxendix*. It has a large cavity, which receives the head of the thigh-bone. This cavity has its circumference tipped with a cartilage, called its *ſupercilium*, or brow, where there are ſeveral ſinuſes and protuberances, ordained partly for the production of muſcles, and partly for ligaments.

In

In all young animals, theſe may be divided into ſeveral bones; but in ſuch as are old, the cartilages, by which they were at firſt only joined, change their name and become bony, by which means they grow united, and make but one bone.

## *SECT. XXXII.*

### OF THE BONES OF THE THIGH, HINDER LEGS, AND FEET.

THE thigh-bone is that which reaches from the hip to the ſtifle; it is long and round, and, in ſome parts, a little convex. Its upper part is made up of a large head and neck, with two proceſſes, and below it determines into a head, which has two productions, with a cavity between them.

Its upper head is round, and ſomewhat longiſh, that it may the better fill up the acetabulum, or cup, which of itſelf is deep, but the more ſo as it is incompaſſed with a cartilage. There is alſo a thin cartilage, which covers the round head of this bone, that its motion may be glib and eaſy within the cup, and becauſe of its great weight which the thigh ſuſtains; it is therefore tied by two ſtrong ligaments, one of which is round, ariſing from the inſide of the acetabulum, near its bottom, and implanted into a little ſinus on the

the upper and fore-part of the ſaid head of the thigh-bone; and the other, proceeding from the edge of the acetabulum, by the aſſiſtanee of a membranous ſubſtance, incloſes the whole articulation.

The ſlender part under the head of the thigh-bone, is called its *neck;* it is long and oblique, and is accounted a proceſs of the bone. There ariſe, at the lower end of the neck, two other proceſſes, whieh go by the name of the greater and leſſer *trochanters*. The uppermoſt, or larger proceſs, is rough, beeauſe of the inſertion of ſome muſcles into it. The undermoſt is ſomewhat uneven, eſpecially toward its root, where the vaſtus internus riſes.

The thigh-bone below its middle becomes thieker, its lower end terminating in an ample and broad head. This head is formed into two proceſſes, between whieh there is a large ſpaee that receives a protuberanee of the head of the leg-bone. The outſide of theſe two proeeſſes is rough, but their inſide ſmooth, being covered with a cartilage for the more eaſy motion of the joint. From them proceed ſome of the muſeles that move the leg, and into them are inſerted ſome of thoſe that move the thigh. Their ſides are full of ſmall holes, from whence ariſe the ligaments that ſtrengthen the patella, or ſtifle.

In the middle, between the two heads, there are two eavities, the foremoſt of which receives the protuberation of the ſtifle-bone, being eovered

vered with a griſtle for that purpoſe. The other, which is deeper, as alſo rough and unequal, receives the protuberation of the leg-bone. Beſides theſe, there is a cavity on the outſide of the outer head, and another on the inſide of the inner head, through both which the tendons of ſeveral muſcles of the leg deſcend.

Where the lower end of the thigh-bone is joined to the upper end of the leg-bone, on the foreſide is placed a ſmall bone, ſomewhat round, called the *patella*, or ſtifle-pan; it is plain without, but on its inſide it is a little convex, having a ridge which falls between the juncture of the two bones; its inſide is covered with a griſtle, and its ouſide with the broad tendons of ſome of thoſe muſcles that extend the leg, which keep it firm in its place, by adhering cloſely to it. This bone not only ſtrengthens the articulation of the thigh and leg, but alſo ſerves as a pully for the tendons of the muſcles which paſs over it, and facilitate their action by removing their direction from the centre of motion.

The tibia, or leg-bone, to which the thigh-bone is articulated, comes the next to be deſcribed. In a horſe it is very different from what it is in men, being long and round, and not triangular, as in the latter. Its upper part is much broader and thicker than its lower, and both receives and is received by the thigh-bone, having two cavities, and betwixt them a prominence, which is alſo covered with a cartilage, as all the other appen-

dages to the joints are. Within the cavities of this joint, there is always to be found an unctuous or oily matter, which is ſeparated to further the motion thereof, by keeping it moiſt and ſlippery. Its lower head is round, and likewiſe covered with a griſtle, to facilitate the motion of the inſtep.

This bone has ſeveral ſinuſes and appendages, as well as the thigh-bone, not only for the paſſage of the tendons of ſome muſcles, but alſo to give riſe to others which move the foot; and has likewiſe a conſiderable bore, which reaches from the upper to the lower appendage, and is filled with marrow to keep it moiſt, and preſerve it from becoming too brittle.

The bones of the hock are in number the ſame with thoſe in the knee, and are diſpoſed in two ranks, viz. three in the firſt rank, and four in the undermoſt. They are alſo articulated with the inſtep, as the others are with the ſhank, only that they are ſeated in the bending of the joint. Theſe bones are of uſe to hinder a horſe from falling upon his hams, when he raiſes himſelf upwards, and goes upon his haunches; and are alſo like a ſpring to that joint, by which he recovers himſelf in all actions where the hind-legs are chiefly concerned.

The inſtep-bone, to which theſe ſmall bones are articulated, is made up of three bones, which adhere ſo cloſely together, that they can hardly be ſeparated or diſtinguiſhed until the perioſteum is very

very clean ſcraped off; and are much the ſame as thoſe of the ſhank, already deſcribed. The paſterns and coffin-bone, &c. agreeing in every reſpect with thoſe of the fore-foot, we ſhall omit mentioning them in this place. But before we leave this ſubject, it will, no doubt, be expected we ſhould take ſome notice of the hoofs, they being of a hard ſubſtance, and a very great defence to a horſe's foot.

The hoofs of a horſe are thoſe parts which anſwer to the nails in human bodies, and are no other than a bundle of huſks, which cover and ſheath the papillæ pyramidales of the ſkin on the extremities of the feet, which dry, harden, and lie cloſe one upon another. They are of a middle nature between bones and griſtles, that they may not ſplinter and break becauſe of their hardneſs, and at the ſame time be able to bear and ſupport ſo great a burthen without much damage; and are without ſenſe, that they may endure travelling among ſtones and rough ways. They adhere firmly to the parts included within them, and are faſtened to the coffin-bone by a ligament that proceeds from their root, which is in ſome meaſure encompaſſed with the ſkin.

Underneath the hoofs there are many nerves, tendons, and muſcles, which take their courſe quite to the ſole of the foot.

## TABLE VII.

*The Explanation of the Figure of the Skeleton of an Horſe.*

Figure III. is the occipital, or noll-bone.

IV. The lower jaw.

V. The upper jaw has twelve bones, excluſive of thoſe common to the ſkull. The firſt is zygomaticum, the ſecond lachrymale, the third is continued with bones of the noſtrils, and is called by no particular name; the fourth is called *os malæ*, the fifth is the prominence of the noſe, with its companion, and is joined to the internal proceſs of the frontal-bone, &c. &c.

VI. The *os hyoides*. The derivation of the name is from the Greek letter *υ*, reſembling the bone of the tongue.

VII. The ancyroides, or blade-bone.

VIII. The ſternum, or breaſt-bone.

IX. The os humeri, or ſhoulder-bone.

X. The cubits, or leg-bones of the fore-part.

XI. The ſmall bones that make the knee.

XII. The ſplint-bones of the fore-legs.

XIII. The ſhank-bones of the fore-legs.

XIV. The

*This is a perfect Representation of the Skeleton of an Horse*
*See Table VII.*

XIV. The triangular bones that are fixed to the great paſterns.

XV. The great and little paſterns of the fore-legs.

XVI. The coffin-bones of all the feet.

XVII. The ſeventeen ribs.

XVIII. The *os ilium*, ſo called becauſe the gut ilium is under it.

XIX. The os pubis, or ſhare-bone.

XX. The thigh-bone.

XXI. The bones of the hind-legs.

XXII. The bones that form the knee, and hocks of the hind-legs.

XXIII. The ſplint-bones of the hind-legs.

XXIV. The ſmall bones that are formed round the upper end of the great paſterns.

XXV. The great paſterns of the hind-legs.

XXVI. The little paſterns of the hind-legs.

XXVII. The thigh bone of the hind-legs.

XXVIII. The coxendix.

A. B. C. D. E. F. G. ſhew the ſeven vertebræ of the bones of the neck.

From the letter G. begin 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, which

which are the vertebræ of the thorax and back.

And the figures 1, 2, 3, 4, 5, 6, 7, are the vertebræ of the loins; and again from 1, 2, 3, 4, 5, 6, the ſix proceſſes of the os ſacrum; from 1, to 18, are the repreſentations of the eighteen bones of the rump.

## SECT. I.

OF

# THE SIGNS OF SICKNESS IN HORSES,

THE

# CAUSES THEREOF,

AND

# METHODS OF CURE.

IN treating of the diſtempers of horſes, it will not be improper to premiſe their general ſigns of ſickneſs. The firſt ſign of illneſs in a horſe is, a loathing of food; next to that, a wild hagard look, cold ears, a hot and foamy or clammy mouth; the hair on his flanks rough and ſtarting, its ends paler than uſual; hard, black, or greeniſh dung; limpid urine, weeping eyes, a heavy drooping head, an aptneſs to ſtumble, an unuſual dulneſs and civility to other horſes, frequent riſing and lying down in the ſtable, and looking towards his flanks, which are doubled; a beating of the heart ſenſible to one's hand, between

tween the left ſhoulder and ſengle; an indifferency and unconcernedneſs in what is done to him.

If a horſe after long ſickneſs, urines without ſtriding, or extending his yard, and was not uſed to do ſo in health, it is a fatal ſign. If the hair of his tail or ſkull is eaſily plucked off, it portends death. If he never lies down, or ſtarts up immediately when he does, it ſpeaks danger; but a continued lying in the declenſion of a diſeaſe, is a very good ſign. If he turns up the whites of his eyes, he is in pain, and will be long ill.

Theſe general ſigns give us to know that a horſe is ſick, but the particular diſeaſe is to be diſcovered by its peculiar ſigns.

We ſhall now proceed to give a rational account of health and ſickneſs.

As the health of a horſe conſiſts in a due and eaſy motion of the blood, ſo a diſeaſe may be properly ſaid to be an irregular circulation of the blood throughout the whole body, or in ſome part only; and thus a creature may be properly termed diſeaſed, when its blood flows faſter than uſual, or when it moves more heavily and ſluggiſhly, or when it is irregular in its motion, being ſometimes ſlow, and ſometimes more quick. Or, laſtly, when its progreſs is impeded and hindered in ſome particular part of the body only, as is common in all ſwellings, &c. And therefore whatever occaſions an unuſual circulation of the blood in any of the foregoing reſpects, may be accounted the cauſe of a diſeaſe.

Now

Now the cauſes which bring on diſeaſes being, in a manner, infinite, ſince moſt accidents to which bodies are expoſed from other bodies, may be the occaſion of ſome diſtemper; and likewiſe ſince diſeaſes may proceed from the action of the ſame body upon itſelf, in a way that is either voluntary or involuntary; we ſhall therefore forbear all unneceſſary and unprofitable deviations, and only take notice of thoſe cauſes which are moſt apparent, and the moſt common.

The ancients being unacquainted with the true ſtructure and œconomy of animal bodies, aſcribed a great deal to thoſe qualities which they believed to be in all bodies proceeding from the four elements, as alſo to the errors of feeding, exerciſe, reſt, &c. &c. which they called the *non-naturals*. Our farriers have puzzled their readers with a ſort of philoſophy which neither themſelves underſtood, nor will ever be of uſe to poſterity. Some begin with generation and corruption, and others with the formation of animal bodies out of the four elements, viz. fire, air, water, and earth; and ſubſequent to them to be made up of four humours, viz. blood, phlegm, choler, and melancholy; and accordingly their bodies were of different temperaments, hot and dry, cold and moiſt, as this or that humour was predominant.

We ſhall very readily own, that ſome of theſe marks often denote the faults and imperfections in horſes, but that they are reducible to ſuch temperaments and humours as are aſcribed to them, is a mere dream, and doubtleſs may have

been the death of ſome thouſands of horſes in this kingdom, ſince it is but reaſonable to ſuppoſe that moſt of the farriers judge of the inward diſtempers of horſes more from their colour and complexion, than from any other ſigns whatſoever.

All that can be juſtly obſerved in horſes, as to their temperaments, are the two extremes of too much fire or too little, the reſt inclining more or leſs to the one or the other. When a horſe has too much fire, and is therefore untractable and unmanageable (if that diſpoſition is not itſelf a diſeaſe) it expoſes him to a great many accidents, which would be needleſs to name; beſides that by the continual reſtleſſneſs of his ſpirits, and the conſtant hurry of his blood, he muſt therefore be ſubject to ſeveral diſtempers, more particularly fevers, and often thoſe of the worſt kind. If, on the other hand, a horſe be of a dull ſluggiſh diſpoſition, he muſt be expoſed to diſtempers that are peculiar to a ſlow and languid blood; and the nearer any horſe approaches to either of theſe temperaments, he is the more obnoxious to their diſtempers.

Horſes may alſo be ſaid to be of different temperaments at different periods of their life; and therefore a young horſe being full of blood, and his ſolid parts as yet of a looſe texture, muſt be more ſubject to diſeaſes than one who has arrived at his prime; and thoſe diſeaſes muſt be of a worſe conſequence to him, if not carefully attended to. And likewiſe a horſe who is grown old, though

ſuch

ſuch an one is not ſo apt to be diſeaſed as a young horſe, yet their diſeaſes more frequently end in death, becauſe the blood at that time proves languid, and loſes the vigour that is peculiar to youth and the middle age, which muſt needs deprive them of the benefits and aſſiſtances of nature: But a horſe in his prime, having then all his parts well conformed, and his blood in its beſt ſtate, neither too luxuriant, nor too much impoveriſhed, and likewiſe the quantity of blood being in that age nearly adjuſted to the capacity of the veſſels in which it flows, he is therefore neither apt to be diſeaſed, nor are his diſeaſes apt to be of long continuance.

But the practitioner ought carefully to take notice, that theſe obſervations concerning temperaments may, for the moſt part, be very juſt, yet it is undeniable that ſome are more robuſt and hardy while but colts, than others are at the prime of their age; and ſome retain much of their vigour, even when they are grown old, and as eaſily get over any accidents as horſes that are young. It is likewiſe to be obſerved, that ſome horſes of a faint waſhy colour, ſometimes prove hardy and durable; and therefore, beſides all common rules and obſervations, it may be neceſſary to the forming a right judgement of the temperaments and conſtitutions of horſes, to have recourſe to examination and trial.

After what has been ſaid as to temperaments, we ſhall not trouble the reader with thoſe confuſed

and unprofitable ſpeculations about members, powers, actions, and operations, and the reſt of thoſe they termed *naturals*, but proceed to the non-naturals, which, according to the ancients, were reckoned ſix in number, viz. air, meat and drink, ſleep and watching, motion and reſt, things excreted and retained, and the affections or motions of the mind, and were ſuch as hurt by neceſſity; ſo that this enumeration is more accurate, as applied to brute creatures, than to man, who has the uſe of his reaſon, and may therefore avoid ſeveral of the accidents proceeding from them.

Theſe are ſaid to be profitable or hurtful to all creatures; but our buſineſs at this time, is only to take notice of them in the latter ſenſe. Firſt, as to air.

The air may be many times the cauſe of diſeaſes; for if that be too much rarified, it hurts the blood's circulation, not being of ſufficient force to help it through the lungs; whence its motion becomes ſlow, and perſpiration decreaſes, which leaves a load upon the veſſels, and renders the blood viſcid and tenacious. The ſame effect alſo happens from the air being too groſs, for then the circulation of the blood is impeded in the lungs, by its too great preſſure and weight upon them.

Food may alſo become hurtful to horſes, both as to its quantity and quality; for if it be muſty and raw, corrupt and unclean, it muſt breed crudities,

crudities, and thereby render the chyle viſcid, which will of neceſſity retard the motion of the blood; and if it be of too hot and ſpirituous a nature, it muſt, on the contrary, render the blood too thin, and thereby increaſe its motion too much. Immoderate feeding, be the food ever ſo wholeſome, eſpecially when the horſe wants exerciſe, muſt vitiate the blood; for in ſuch a caſe there is no room given for digeſtion, ſo that a quantity of chyle muſt enter into the maſs of blood before it has been thoroughly prepared in the ſtomach. The ſame effects may be produced from exceſſive drinking, eſpecially of ſtagnated waters, or waters proceeding from ſome ſort of minerals.

Long-continued exerciſe, eſpecially when it is too violent, occaſions a too great diſſipation of the ſpirits; and if a horſe's ſtomach is very full, or if he be full of blood, it brings on innumerable diſorders, as ſhall be treated of when we come to the particular diſeaſes. But the want of proper exerciſe is equally pernicious, as it hinders digeſtion, and occaſions a too great diſtention of all the veſſels, which cauſes ſurfeits, and other diſtempers.

A too quick diſcharge of the dung, before there is a due ſeparation of the chyle from the excrementitious parts, occaſions ſickneſs; for in ſuch a caſe, there is ejected and thrown out the uſeful with the uſeleſs, whence muſt proceed a refrigeration and weakneſs of the body, by reaſon of a debilitated circulation of the blood. On the other hand,

hand, when a horſe is coſtive, and his excrements retained too long, a plethora, or over-fullneſs, will be apt to enſue. But theſe are rather to be accounted diſeaſes than cauſes, eſpecially in brute creatures.

Immoderate ſleep may often be the cauſe of ſickneſs; becauſe in ſleep the external ſenſes are weak, the nervous fluid moves ſlowly, the heart is ſeldomer contracted, and the circulation of the blood goes on with leſs briſkneſs. Watching produces the contrary effects.

Beſides the above-recited cauſes, which are indeed the moſt common and ordinary, there are an infinite number of others, which may bring on diſeaſes, as has been obſerved; and ſuch are all outward accidents, as falls, bruiſes, wounds, and the like; as alſo unreaſonable evacuations, and all improper application of remedies, which is frequently practiſed among farriers for prevention, while horſes are in a ſtate of health.

## *SECT. II.*

### THE METHOD OF CURING DISEASES INCIDENT TO HORSES.

A Particular regard is to be had to thoſe ſymptoms that are the moſt urgent, and any way endanger life; and therefore if the ſigns diſcover a horſe to have an inflammation in the lungs,

lungs, or pleura, which may be judged of by his being ſuddenly ſeized with a difficulty of breathing, and an inability to continue in one poſture; or if a ſwelling ſhould ariſe on his throat, which might hinder him from getting down his food, or render him liable to ſuffocation, ſuch evacuations or other means as are proper to remove thoſe ſymptoms, muſt immediately be uſed, ſetting aſide all other conſiderations of ſickneſs. And in like manner, if a horſe ſhould be ſeized with a violent hæmorrhage of blood, the firſt intention muſt be to ſtop it; for the removing of thoſe not only preſerves life, but in ſome caſes puts an end to the diſeaſe.

If in any diſtemper the indication is taken chiefly from crudities lodging in the ſtomach and guts, then ſuch medicines only as clear thoſe paſſages are to be adminiſtered, without regard to any other; but if this be accompanied with any other diſeaſe, then all the medicines that are to be given in ſuch a caſe, muſt not be levelled at the diſeaſes of thoſe parts directly, but at others in conjunction with them.

If the indication is taken from the blood, it is then to be conſidered that all its diſorders depend upon its circulatory motion being increaſed or diminiſhed; and all the changes in the texture and quality of the blood, as alſo in its quantity, are attended either with a diminution or increaſe of the blood's velocity; and therefore if the quantity of blood is augmented, bleeding and other evacuations

tions are neceſſary; but if the quantity thereof be diminiſhed, then reſtoratives, reſt, and nouriſhing food, may be required. And if this laſt proceed from any error in the ſtomach, cauſing loſs of appetite, in ſuch a caſe thoſe things are to be adminiſtered which create hunger, and help digeſtion. If the texture of the blood be changed, as is uſual in a continued courſe of ſickneſs, then it may be neceſſary, beſides other intentions, to adminiſter ſuch things as may correct the vitiated maſs.

When a diſeaſe proceeds from an increaſe or diminution of ſome ſecretion, the cure ought, for the moſt part, to be performed by ſuch things as enlarge the ſecretions that are too ſparing, and reſtrain ſuch as are too liberal. And the ſafeſt way to reſtrain an augmented ſecretion, is by the increaſe of ſome other ſecretion. And indeed this method of revulſion has been ſafely practiſed among all phyſicians; and if it could be rightly underſtood by farriers, it would be of the greateſt importance in their practice.

But here it is to be remarked, that when we ſpeak of an augmented ſecretion, we underſtand that as a diſeaſe, and not as a remedy; for ſometimes a ſecretion augmented becomes a cure; and in ſuch a caſe it is not to be ſtopped immediately, but rather ſomewhat aſſiſted, when any way imperfect. For inſtance, if a horſe be lax, and has a ſcouring upon him, when this proceeds from a diſorder of the guts only, by a putrefaction of the excrements

excrements too long detained, it may be very proper to adminiſter ſome moderate purge, provided it be of ſuch a nature as will not too much relax the inteſtinal glands. But if its cauſe proceeds from an obſtructed tranſpiration, as is very uſual, then ſuch things as promote ſweat, and a breathing through the pores, muſt be likewiſe adminiſtered. The like method is to be obſerved in moſt other ſecretions, as in ſweat, urine, running at the mouth and noſe, which may be often obſerved among horſes in the decline of ſickneſs.

In the cure of all diſeaſes, nature is the beſt guide, and therefore the farrier muſt diligently follow her. Whenever ſhe finds herſelf oppreſſed, ſhe endeavours to throw off the load, and tries all the neareſt and propereſt ways for her relief; and it is for the conſervation of health, or recovering it when loſt, that ſhe is ſo abundantly furniſhed with drains and out-lets, for ſuch are moſt or all the glands, by which ſecretion is performed; but though nature is to be carefully obſerved and followed in all her motions, and to be aſſiſted when her operations are too weak and imperfect, or reſtrained when too powerful, yet ſhe is not to be compelled, but muſt herſelf be the beginner, and very often the finiſher of the work alſo. Therefore, whenever the practitioner finds her own efforts fruitleſs, while ſhe is endeavouring one time by one ſecretion, and at other times by another, to give vent to that which oppreſſes her, he is not to be over forward in aſſiſting her in her reſtrained inclinations, but conclude with himſelf,

that the matter is not as yet rendered of ſuch a due magnitude or ſmallneſs, as to be carried along the canals, and diſcharged by the veſſels which are appointed for that purpoſe; ſo that his buſineſs is only to help her in ſuch things as will thicken or attenuate, &c. as he ſhall ſee occaſion, waiting with patience until her more ſenſible operations become permanent and laſting, and that ſhe become free and eaſy in all her exertions; and this change is what phyſicians call the *criſis*, or turn of a diſtemper.

But when her operations are too violent and powerful, if life is thereby at ſtake, as in the inſtances before mentioned, by an exceſſive hæmorrhage of blood, or an influx into ſome part, occaſioning a ſuffocation, or in caſe of an augmented ſecretion continuing too long, then the rules already laid down muſt be followed. But if it happens, as may be often obſerved in imperfect criſes, that an hæmorrhage of blood proceeds only from a rupture of veſſels that are very ſmall, or that the blood, by reaſon of its abated heat, flows but moderately; or if a tumour ariſe, or an abſceſs be found in any part of the body, by which life is not in danger; theſe are not to be prevented, but managed in a way that is ſuitable to the nature of ſuch accidents.

*SECT.*

## SECT. III.

### GENERAL RULES FOR BLEEDING AND PURGING.

THERE is no operation more ready, or indeed more uſeful, than bleeding, as nothing can, in many caſes, give ſuch immediate relief; for by blood-letting, the heat of the blood, and conſequently its velocity, proceeding from whatever cauſe, may be thereby abated; and not only its velocity and heat, but alſo its viſcidity, whether from an acid, or from any other coagulating or thickening matter, may in a great meaſure be deſtroyed; and therefore in all caſes where the blood is too much agitated and in motion, or where it is too much thickened, blood-letting is required.

But we ſhall lay down ſome of the particular indications which chiefly call for that operation; and in doing thereof, we ſhall not confine any one to times and ſeaſons, or particular influences, which we find ſo much obſerved in old phyſical writers; for according to their doctrine, ſome part of the animal body muſt have been diſeaſed every month. All the caution, therefore, that is to be had in that reſpect, is only to avoid it as much as poſſible in the extremities of heat and cold, excepting when ſome urgent neceſſity requires it.

The ſigns that require blood-letting are, firſt, an over plenitude, or fulneſs, which may be diſ-

covered in a horſe, becauſe ſuch an one will be apt to be purſive when he is put to any kind of exerciſe, and his ſtomach will ſomewhat abate; in ſuch a caſe, bleeding cools and refreſhes a horſe wonderfully.

Blood-letting is proper in the beginning of almoſt all fevers, whether ſimple or complicated; that is, whether the fever conſiſts ſimply in an augmentation of the blood's motion only, or when the blood is, beſides that, vitiated; but care muſt be taken, if the diſtemper takes its origin from the want of blood, as very often happens after long hæmorrhages, or after long ſcouring, or after a too plentiful uſe of evacuations, or when a horſe has been ſome time in a declining condition; in ſuch caſes, though ſome indications may perhaps require bleeding, yet it is to be uſed ſparingly.

A horſe ought to be bled for all ſwellings and impoſtumations, when they happen to be ſituated on any part of the body, ſo as to endanger a ſuffocation, or any other ill accident; but if there be none of thoſe appearances, and at the ſame time have a tendency to ſuppuration, bleeding ought not to be performed, becauſe that would be manifeſtly to oppoſe nature, who herſelf is endeavouring to throw off what is hurtful to her in another way; but in ſwellings of the legs, occaſioned by the greaſe, blood-letting is not only ſafe in the beginning, as it may make a revulſion, but neceſſary before they are much inflamed, or come

come to break; becauſe this diſtemper at firſt proceeds chiefly from a ſtagnation of the blood in the extreme parts, from the ſmallneſs of the veſſels, &c. and not from any manifeſt diſorder in the blood itſelf. But of this in its proper place.

Bleeding is neceſſary in all violent pain, whether it proceeds from an internal or external cauſe, as wounds or bruiſes, and in caſe of inward pains, as from an inflammation of the lungs and pleura, or the liver, when they can be diſcovered; and then the operation may be once or twice repeated; but in pains of the ſtomach and guts, proceeding from ſlimy or viſcid matter lodged in them, unleſs the farrier could alſo be aſſured theſe were accompanied with inflammation of thoſe parts, it is better to forbear it; becauſe, in ſuch a caſe, if a revulſion be made, the blood may be too much diveſted of its ſpirits, and nature diſappointed of her deſign of expelling what ſhe finds hurtful to her.

Blood-letting is moreover neceſſary in vertigoes, and moſt diſorders of the head; and in the beginning of all colds, by which defluxions are apt to fall on the lungs, and rheums into the eyes. And here we cannot omit taking notice of an error in the Sieur de Solleyſel, who forbids bleeding in diſeaſes of the eyes. It is not improbable that author may have obſerved ſome ill conſequences from this operation, but it has been in ſuch caſes as proceed from exinanition, that is, when the

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ſtate of the blood is very low; for then that which is carried into the extreme parts very often ſtagnates, from the want of a ſufficient force in the heart to drive it forward into thoſe parts; and when the ſucceeding fluid has not force enough to impel the antecedent blood; ſo that if a diſeaſe happen in the eyes from any ſuch cauſe, the leſſening the quantity of blood, which is already too ſmall, muſt needs occaſion ſome very great diſorder in thoſe parts, if not abſolute blindneſs. But in all ſuch caſes as proceed from an over fullneſs, or from hard riding, which drives the blood faſter into the outward parts than can be readily returned by the ſmall capillary veins; or if theſe diſorders proceed from the blood being too viſcid, by which means it loiters in the ſmall veſſels of the eyes, blood-letting muſt then do great ſervice, and is often practiſed among horſes to very good purpoſe. For the ſame reaſon it may be uſeful in the farrin, the itch, and all diſeaſes of the ſkin.

There muſt be conſtant care taken of the age, ſtrength, and conſtitution of all horſes. A young horſe, though he be more ſubject to diſeaſes, as has been already obſerved, will, however, much ſooner recover the loſs of blood than a horſe that is full-aged; and a full-aged horſe ſooner than an old one, becauſe all young animals are vigorous in their appetite and digeſtion; but yet a full-aged, or an old horſe, if either be hardy and ſtrong, may overcome all loſſes of this kind, better than

than ſome young horſes who are of a waſhy and delicate make. We ſhall now proceed to purging.

We need not offer to explain what is meant by purging, ſince every one knows that it is the diſcharging of humours and excrements through the common paſſage of the belly. The way this operation is performed, is with ſuch medicines as by their irritation ſtimulate the membranes of the guts, whereby their periſtaltic motion is quickened, ſo as to ſhake off their contents. But if the doſe or potion happens to be large, or if it be made of ſuch things as abound much with thoſe ſtimulating particles; or, to expreſs it after the common way, if very ſtrong phyſic be given, it not only carries off what is contained in the guts, but likewiſe cauſes ſuch frequent and reiterated twitches, as derive a more than ordinary quantity of blood into thoſe parts, whence is ſeparated and diſcharged abundance of ſerum, which is thrown off by the common paſſages before mentioned. And hence it is evident, that phyſic may be ſo ordered as to carry off more or leſs of the ſubſtance of the blood, according as the doſe is enlarged or diminiſhed, or as it abounds more or leſs with thoſe purging particles; and conſequently that it may be rendered either profitable or hurtful, according as it is managed.

We ſhall not here detain the reader with the manner of preparing the body for this operation, neither ſhall we lay down rules for rendering this or that ſort of humour fit for a diſcharge by medicines,

dicines, which have been ignorantly, but with much induſtry, deviſed; that ſort of practice being now juſtly exploded as uncertain and ridiculous, ſince it is very plain that all purging phyſic differs only in the degrees of ſtrength, and works no otherwiſe on different humours, than as it is able to reach only thoſe that are near, or ſuch as are more remote from the guts, where its principal ſcene of action lies. What particular regard is to be had to thoſe things, will be ſufficiently ſhewn hereafter. We ſhall therefore only in this place lay down ſome general directions, which, we hope, will be of uſe to all who practiſe medicine among horſes.

Purging may be neceſſary in moſt or all plethoric caſes, eſpecially after an evacuation has been made by blood-letting, and the body rendered ſomewhat cool and light; for if a horſe be purged when his body is very full, it may, unleſs the other ſecretions are alſo free, occaſion, during the operation, a too great hurry in the blood's motion, bred from too great a quantity of blood; or by deriving too much blood into the inteſtines, may occaſion an inflammation of the guts. For the ſame reaſon, horſes that are plethoric, or full of blood, ought only to have mild purges given them.

Becauſe a horſe can ſeldom or ever diſgorge himſelf by vomit, gentle purging may be allowed in diſorders of the ſtomach, before other things are adminiſtered.

Purging

Purging is the moſt neceſſary remedy for all foulneſs in the guts, for the expulſion of all viſcid roapy matter, and in all caſes where a horſe is infeſted with worms.

It is a great relief in coſtiveneſs, eſpecially after ſuitable clyſters have been firſt adminiſtered. It is alſo uſeful in all ſcouring and looſeneſs of the belly, when performed by ſuch medicines as afterwards conſtringe the inteſtinal glands. But in this caſe many of the tribe of purging medicines may be very hurtful, and occaſion either a too great relaxation of thoſe glands, or an inflammation of the guts, by their too violent and harſh operation.

In all caſes where there is a groſs habit, with a tendency to ſwellings in the limbs, or any other part of the body, purging is neceſſary. Alſo in humid and watery diſeaſes. In diſorders of the liver, cauſing the jaundice, and in many of the diſeaſes of the eyes it does manifeſt ſervice, by the revulſion it makes from thoſe parts, and in moſt ailments in the head, where there is no fever, but only a ſtagnation of the blood in ſome of the ſmall capillary or hair-like arteries. For purging, in ſuch caſes, not only drains off part of the ſuperabundant matter, but alſo, by putting the blood into a briſker motion, cauſes a ſeparation of its groſſer parts, ſo that it moves with more freedom and eaſe in all its canals, and is thereby brought more readily to the ſecretory offices.

But in this operation, as well as in bleeding, a particular regard ought to be paid to the ſtrength

of every horſe, becauſe the irritation that phyſic makes in the ſtomach and guts, when it is powerful, occaſions ſuch diſorderly agitations in the blood and ſpirits, as cauſe violent ſickneſs, attended with cold damp ſweats, and ſometimes with convulſive motions. All this I have ſeen frequently happen to horſes while under this operation, and therefore they ought not only at that time to be carefully looked after, but their phyſic ſhould be qualified with ſuch mixtures as will prevent it from adhering too cloſely to any part of the guts.

But what relates to this, and all other operations, will be performed in the ſequel of this treatiſe, where all thoſe general rules ſhall be juſtly and methodically applied.

## *SECT. IV.*

### OF A COUGH AND HUSKINESS IN THE THROATS OF HORSES.

THESE diſorders ariſe from a convulſive motion of the diaphragm, thorax, and abdomen, owing to an irritation of the larynx. The huſkineſs is an affection of the aſpera arteria, cauſed from an infuſion of thin acrid lymph, or an abraſion of its internal mucus. But young horſes are thus affected, ſometimes by worms; and coughs are very frequently a primary diſeaſe, which

which diſorder the whole body by their violent obſtinacy. The cauſe alſo of this diſorder may be, from a flux of ſerous humours from the outward parts and the extremities of the body to the lungs, and is accompanied with feveriſh heats and ſhiverings in the evening, from taking cold. Bleeding in ſmall quantities, and often, ſhould not be neglected; and to promote an equal circulation of the blood, and ſend back the ſerous humours from the cheſt to the ſubcutaneous glands, hot pectoral infuſions will be proper, prepared of mallows, leaves of hyſſop, ſage, fennel-ſeeds, anniſeeds, and cinnamon. Two or three quarts of this liquor, given warm, in the courſe of the day, with the following remedies, will ſoon remove the worſt of coughs in horſes.

Take linſeed oil and molaſſes, of each four ounces; ſalt of nitre half an ounce; turmeric and elecampane-root, in powder, of each a ſufficient quantity to form a ball, to be given morning and evening.

Or,

Take balſam of ſulphur aniſated, one ounce; flowers of Benjamin, two drachms; gum arabic in powder, one ounce and an half; common tar, two table-ſpoonfuls; with a ſufficient quantity of liquorice-powder form a ball, to be given night and morning.

Or,

Take flowers of ſulphur, four ounces; elecampane-root in powder, and turmeric, of each

one ounce; Locatelli's balſam, two ounces; myrrh, one ounce; oil of anniſeeds, half an ounce; molaſſes, a ſufficient quantity to form two balls; to be given night and morning.

Or,

Take aſſa-fœtida and gum-ammoniacum, of each one ounce; ſquills in powder, three drachms; Socotrine aloes three drachms; oil of anniſeeds, enough to make a ball for night and morning.

Or,

Take oak-bark in fine powder, half an ounce; liquorice-juice, three drachms; myrrh, in powder, one ounce; gum-arabic, two ounces; oil of anniſeeds, one hundred and twenty drops; and with a ſufficient quantity of molaſſes, form a ball to be given night and morning.

Or,

Take olibanum, half an ounce; Japan-earth, two drachms; Venice-treacle, and ſyrup of poppies, two ounces; balſam of ſulphur aniſated, three drachms; with a ſufficient quantity of any ſyrup, form a ball to be given every morning and evening.

Or,

Take oil of ſweet-almonds, four ounces; thebaic tincture, half an ounce; oil of anniſeeds, one hundred and twenty drops; with a ſufficient quantity of liquorice-powder, form into a maſs for two balls, one for the evening, the other for the morning. But if the diſeaſe prove very obſtinate, purges may be adminiſtered,

ſtered, for which ſee the Appendix. Beſides which, warm maſhes, night and morning, of bran and water, with the following cordial ſtomach ball, if thought more convenient than any of the former.

Take anniſeeds, cumminſeeds, elecampane and turmeric, colts-foot, grains of paradiſe, fennel-ſeeds, and aniſated balſam of ſulphur, of each two ounces; flour of brimſtone, four ounces; fenugreek-ſeeds, an ounce and a half. Diſſolve four ounces of liquorice-juice in a pint of water, and mix in the powders; to which add an ounce and a half of oil of anniſeeds; oil of almonds and ſimple ſyrup, of each half a pound; and with as much wheat flour as is ſufficient, make the whole into a maſs, or ſtiff paſte, which keep in a bladder for uſe. For a violent cough, or in order to ſtrengthen or fatten your horſe, give him an ounce and a half of this medicine every morning and evening, till he recovers; particularly, after hard exerciſe, he may have a ball as ſoon as he is well rubbed down, very dry, and his cloth girthed on him, with which, each time may be given a warm maſh of bran and water, and in it, half an ounce of purified nitre may be mixed.

SECT.

## SECT. IV.

### OF COLDS AND FEVERS.

IT would be the moſt unneceſſary and laborious taſk imaginable, to deſcribe the number of different fevers. We therefore upon a certainty can ſay, that fevers overtake the animal from ſevere colds, a ſudden ſtoppage of perſpiration, and often from exceſs of exerciſe. But the general cauſe is from the neglect of the ſervant in not rubbing him dry after ſweating, letting him ſtand in ſome cold place, inſtead of putting him in a warm ſtable, and girthing on his cloth. Therefore, from ſuch idleneſs or neglect a violent cold enſues, the cutaneous paſſages are obſtructed, a ſtagnation of the perſpirable matter takes place, the horſe grows languid, and falls off his food, his ears grow cold, the body coſtive, and ſometimes a ſuppreſſion of urine takes place, and an increaſed circulation of the blood, attended with violent inflammation, which cauſes or occaſions a ſpaſmodic affection of the whole nervous ſyſtem. The beaſt is then affected with difficult reſpiration, chillineſs, ſhivering, or intenſe cold, leſs or more, longer or ſhorter, external or internal, according to the variety of cauſes.

When the increaſed accumulation of the vital heat overcomes the elaſticity of the muſcular fibre, and retains the heart in its diaſtole; or when the fluids

fluids are deſtroyed by the force of the ſolids; hence ariſe inflammations, ſuppurations, gangrenes in the vital viſcera, and aphthous ulcers in the primæ viæ, which, in fevers, is the common cauſe of death, both in man and horſe.

The practice to remove theſe diſorders, is to keep the animal moderately cool, give him plentifully of warm water and bran, as it is impoſſible he can drink too much. In each gallon of warm water, you may mix half an ounce of ſweet ſpirit of nitre; and when nature verges towards a ſecretion, diaphoretics become neceſſary to help on coction and a criſis. If nature be very languid, cardiacs, aromatics, and volatiles, ſhould be adminiſtered. When the fever is lowered, ſalts and acids may be allowed, and ſmall portions of oats, but often repeated. If a horſe has ſtrength, bleed him firſt, then give him purified nitre, one ounce; ſal ammoniac, half an ounce; camphor, three drachms; make them into a ball for one doſe, with molaſſes and flour, and repeat it night and morning.

Theſe balls will allay thirſt, promote the ſecretions, and attenuate and thin the ſizy blood. But to give them in ſuch large quantities, and ſo often in the day, as directed by ſome authors, would naturally and certainly break the craſis of the blood into an undue proportion of ſerum, and, in time, terminate in a dropſy.

In order to promote perſpiration, make the following powders into a ball, and adminiſter one of

of them every four or ſix hours, keeping the horſe well clothed, and giving him plentifully of warm water and bran.

Take tartar emetic, levigated, twenty grains; ſnake-root in powder, two drachms and a half; compound contrayerva-powder, half an ounce grains of Paradiſe in powder, ten drachms; with a ſufficient quantity of molaſſes make a ball for one doſe.

☞ The nitre ball is likewiſe to be continued night and morning, as before directed.

And every ſecond day, twice or thrice only, give the following cooling purge, which will only keep the body gently ſoluble; ſal polychreſt, three ounces; diuretic ſalt, one ounce and a half; jalap in powder, four drachms; buck-thorn-ſyrup, four ounces; powdered ginger one ounce; to be mixed in a pint of thin warm gruel.

If the horſe has a cough, and it does not immediately give way to this treatment, bleed him often in ſmall quantities, which will lower the inflammation of the lungs.

After the fever is entirely removed, and the creature appears to be relaxed, or the digeſtive faculties debilitated, adminiſter every morning and evening, as under.

Take ſound oak-bark, galangal-root, Winter's-bark, and ſnake-root, all in powder, of each an ounce; grains of Paradiſe, one ounce and a half, and with a ſufficient quantity of molaſſes, make two balls. After giving this two or three days following,

following, then the above quantity, divided into two doſes, will be ſufficient for each day, till the horſe recovers.

Theſe methods, if properly contrived, will do in all fevers, as well as in every kind of cold whatever. We could furniſh the reader with a number of ſheets upon fevers, but it would amount to nothing more than what we have written here, which is within the bounds of reaſon, and warrantable practice.

## *SECT. VI.*

### OF THE CEPHALALGIA, OR PAIN IN THE HEAD.

THE cauſe of pain in the head, is from acrid particles of blood and lymph, which vellicate or diſtend the membranes, or nervous fibrillæ; but very often from over exerciſe, plethora, coſtiveneſs, &c.

The ſigns of this diſeaſe are, a hanging down of the ears, dimneſs, or heavineſs of the eyes, which are moſt commonly very watery. Sometimes a pain in the ball of the eye will cauſe the diſorder, and often from a diſtraction of the fibres of ſome blood-veſſels in the brain, or membranes thereof, occaſioned by ſome of the ſmalleſt particles of the ſerum being ſtruck into the pores, or interſtices of the ſaid veſſels, by the frequent occurſions of the blood.

The dropping of his urine, ſwoln eyes, with a fever, together with puſhing his head againſt the manger or ſtall, are true ſymptoms of the horſe being in great pain in his head.

As we have already mentioned in this Section, the cauſes of the head-ach may be all ſuch things as are able to diſtract the parts, nerves, and membranes, from one another; but there is nothing in the compaſs of nature, which cannot do that, with whatſoever properties or figures it is endued; for ſince ſomewhat may always be applied or added to another body, ſuch a body may increaſe into a bulk, too big to flow through a canal of a given diameter, and which will therefore require more room. Wherefore, whilſt the ſides of the canal are thruſt outward beyond what they are uſed to be, that is, the parts compoſing thoſe ſides, before contiguous, being looſened and moved away from one another; if that body ſtrikes into thoſe ſides with a briſk impetus, and that impetus is conſtantly renewed, the ſolution will be conſiderable, or the niſus towards a ſolution violent, or there will ariſe pain. Wherefore the conſtituent parts of fluids being ſufficiently augmented in dimenſion, and propelled with a continually-repeated impetus againſt any canal of the body, may occaſion that conſiderable ſolution, in which conſiſts the origin of pain. For it all comes to the ſame, whether ſome parts are added to a body, or the parts of that body are, by any cauſe whatever, ſeparated to ſo great an interval towards the ſides of a canal, as to conſtitute a di-

menſion

menſion equal to that which aroſe from the addition of a new part; for both ways the bulk may ſo increaſe, that the natural capacity of the canal is not big enough to contain it, without ſome violent dilatation; and by means of a ſtrong and frequently-repeated contraction of the heart, a diſtraction of the fibres conſtituting their coats, and conſequently pain muſt follow.

After this diſcourſe, we are to lay down methods to cure the pain of the head, which is to bleed the animal very plentifully, if he has ſtrength to bear it; for after this operation, the impetus and niſus of the parts of blood, will be much leſſened againſt that body which it ſtrikes, whether it be groſs or minute, or whether it forces againſt the ſides of the pores in their coats. After bleeding, two or three rowels will prove moſt ſalutary in this diſorder.

Two or three quarts of the ſudorific decoction, made very ſtrong of lignum-vitæ, may be given warm with a horn, with hot maſhes of bran and water, three times every day; and at night, the laſt thing before the maſh, the following alterative ball muſt not be neglected till cured: Barbadoes aloes, and gum guaiacum in powder, of each one drachm and a half; ſalt of wormwood, one ounce; ſal polychreſt, half an ounce; with wheat flour and molaſſes a ſufficient quantity, make a ball for one doſe. After this ball, once in the courſe of the day, mixed

in the guaiacum, or lignum-vitæ decoction, give as follow:

Take tincture of caſtor, two ounces; aromatic ſpirit, one ounce; Venice treacle, one ounce and a half; mix them in a pint of the warm decoction.

## *SECT. VII.*

### OF THE APOPLEXY; COMMONLY CALLED THE STAGGERS.

THE word apoplexy, is from the Greek ἀποπλήσσω, *percutio*, to ſtrike; becauſe a creature is often ſuddenly ſtruck motionleſs. It is a ſudden deprivation of all internal and external ſenſation, and of all motion, unleſs the heart and thorax. For the underſtanding of which, it is neceſſary to premiſe, firſt, that if by any means a nerve is tied and compreſſed, the part to which that nerve is directed, loſes its ſenſe and motion. Secondly, that if any nerve is cut, there diſtils out a liquor. Thirdly, that motion is performed by reaſon the nervous fluid is impelled, by the force of the arterial blood, through the nerves into the muſcular fibres. And laſtly, that ſenſation is from hence, viz. that objects compreſs or ſtrike upon the extremities of the nerves by their motion, and drive back the nervous fluid towards the brain.

The

The ſtaggers is a ſudden abolition of the external and internal ſenſes, and of all voluntary motion.

There are four kinds of this diſorder; the moſt favourable of them are when the beaſt breathes during the paroxyſm, very little different from what he did when well. The next is when the reſpiration is intermitting, anhelous, and inordinate. Another, when the animal cannot breathe without great pain and difficulty, and when reſpiration for ſome time totally ceaſes. The cauſe of which is the efflux of the nervous influence into the cellular coats of the organs of ſenſe being impeded.

The ancient practitioners in medicine were well acquainted with this diſeaſe, from the derivation of its name *Apoplexia*, from *apopleſſo*, to ſtrike. It may ſometimes be occaſioned from a plethora, and too great an accumulation of blood in the ventricles of the brain; but more frequently it proceeds from a deficiency thereof, and a redundance of viſcid ſerum. After bleeding, give as follow:

Take pill cochia, one ounce and a half; oil of amber, half an ounce; cinnabar of antimony, levigated, ten drachms; valerian-root, in powder, two ounces; galangal-root, an ounce and a quarter; long pepper, half an ounce; jalap, half an ounce; with a ſufficient quantity of buckthorn ſyrup, make paſte for two doſes; half of it every evening, and the other half

every

every morning, for three days following, with warm maſhes of bran and water. No cold water till your horſe recovers.

## *SECT. VIII.*

### OF A PALSY.

THIS diſorder is a privation of motion, or ſenſe of feeling, or both, proceeding from ſome cauſe below the cerebellum, in all or ſome of the parts receiving nerves from the medulla oblongata, below the cerebellum, joined with a coldneſs, ſoftneſs, flaccidity, and, at laſt, waſting of thoſe parts.

Hence it appears that the brain, or cerebellum, is not affected by a palſy; and therefore the internal ſenſes, and the motion of the heart and thorax, or the pulſe and reſpiration, are not neceſſarily interrupted or deſtroyed. But if the cerebrum, or cerebellum, were affected, the internal ſenſes would, lightly at leaſt, be diſturbed; and it might be poſſible for a ſlight apoplexy to follow upon a palſy.

When this privation happens to the human ſpecies, and is in all the parts below the head, thorax and heart excepted, it is called a *paraplegia;* if on one ſide only, it is an *hemiplegia;* if only in ſome other parts, it is called a *particular paralyſis.*

Thus

Thus we are certain that a palſy is very ſimilar to an apoplexy, which not being ſufficiently attended to by ſome authors, they have very erroneouſly diſtinguiſhed hemiplegia and a paraplegia, from a palſy.

A palſy without motion, is cauſed from a too great humidity ſtretching the fibres in length, whether ſuch humidity is internal, or communicated to the blood; or external, and collected upon any particular muſcle. From colds, falls, bruiſes, external compreſſion of tumours, &c. may ariſe a palſy. In beginning the cure, we recommend an opening clyſter, before you adminiſter purging remedies.

Take of hiera-picra, three ounces and a half; aloes, one ounce; oil of amber and rue, of each one ounce and a half; caſtor oil, four ounces. Boil down two handfuls of roſemary in two quarts of water to one quart, then mix the above ingredients, and inject them warm every evening; and every other morning give the following purging ball for twice or thrice.

Take of jalap in powder, and gum guaiacum, of each two ounces; oil of amber, one ounce; oil of roſemary, two ounces; aromatic ſpirit, one ounce and a half; ſyrup of buckthorn, and wheat flour, a ſufficient quantity to form a maſs; divide it into two balls, to be given in the evening immediately after the clyſter has

has operated. This practice every day for three or four times, more or leſs as you find the horſe has ſtrength to bear it, will prove extremely ſalutary; together with the following ſtimulating liniment:

Take oil of turpentine, and oil of vitriol, of each ſix ounces; mix them gradually together in a pint of train oil, with four ounces of unrectified oil of amber, for uſe. Particular care muſt be taken in mixing this embrocation, or it may take fire.

The parts affected, are to be exceedingly wel rubbed with ſome of the above preparation, very often in the day, particularly the back, loins, joints, &c. The night you do not adminiſter the purge nor clyſter, you may give the following ball:

Take of the ſaponaceous pill, one ounce; aſſafœtida, one ounce and a half; oil of amber, rectified, half an ounce; and gum guaiacum, one ounce and a half; with any ſyrup make them into one ball. This method of practice will remove the ſpaſms upon the muſcles, and prevent a locked jaw.

## *SECT. IX.*

### OF AN OPHTHALMY, OR AN INFLAMMATION OF THE TUNICA ADNATA OF THE EYE.

THIS diſorder is accompanied with heat, pain, redneſs, and a ſtagnation of blood in the capillary arteries.

It

It is to be well obſerved by every practitioner, that they are not to miſtake the internal ophthalmy for the external; the external we have deſcribed.

The internal is an inflammation of the retina, which has not been deſcribed by many authors, nor have any of thoſe who have handed down the rules of practice, delivered the ſigns by which this is to be known in the human ſpecies, and we are ſorry to ſay it cannot be come at in horſes, becauſe the ſigns are, beſides inflammations, &c. the afflicted imagines he ſees moats floating before his ſight, with a kind of obſcure duſt, or uncertain appearances of objects flying about him; but theſe cannot be diſcovered in any dumb creature. However, immediately that you perceive the animal's eyes affected, bleed him two or three times following, according to his ſtrength, which may be done with the greateſt ſafety.

After bleeding plentifully, it will be neceſſary to have recourſe to purging, whether the diſeaſe be external or internal.

To conquer this diſorder, we muſt make uſe of mercurial purges, and that ſeveral times, only taking care not to diveſt the horſe of too much of his ſtrength, letting him recover one doſe of phyſic before you give him another.

Take jalap in powder, one ounce and a half; aloes, half a quarter of an ounce; mercurius dulcis, two drachms; oil of anniſeeds, half an ounce; mix them

them together, and with a ſufficient quantity of wheat flour and buckthorn ſyrup, make a ball, to be given every fourth day, for three or four times. If the horſe is weak, give it only once a week.

Take care that he has warm maſhes during the operation of the phyſic; and no cold water on thoſe days, on any account whatever. A few drops of thebaic tincture dropped or ſyringed into each eye, night and morning, is preferable to all other external applications whatever. There are many other diſorders of the eyes to which horſes are liable, and on which authors have written long details, as upon the epiphora, the pin and web, each of which is to be treated as this ſection.

## OF THE GUTTA SERENA.

THIS is a blindneſs which gives no ſigns of diſorder in the exterior parts of the eye, which takes place from an obſtruction, a diſtempered blood, &c. To be treated nearly the ſame as the former, excepting the mercurials ſhould be given every other evening alone, the quantity of half an ounce for a week or more, then purge him, as preſcribed in the laſt chapter. But we muſt beg leave to add, that a cure is ſeldom obtained in this diſorder, either in man or horſe.

OF

### OF A SUFFUSION, OR CATARACT.

THIS diſorder is cauſed from a thick concretion of carpuſcles, mixing with the aqueous humour of the eye, by degrees taking away the ſight.

There is one inſeparable ſign of a cataract being diſcernable, which is a diſorder of the humours of the eye, whereby the pupilla that ought to appear tranſparent and black, looks opake, and of ſome other colour, as inclining to white, grey, brown, blue, &c. by which viſion is variouſly impeded, or totally deſtroyed. The only certain cure for cataracts, is to perform the operation called couching. But this cannot be performed by any but an expert ſurgeon, who underſtands the anatomical part of the eye, and who has been well uſed to the practice. Therefore an explanation of the operation here, would be uſeleſs.

## *SECT. X.*

### OF A PERIPNEUMONY; OR BEGINNING CONSUMPTION.

THIS diſeaſe among horſes, very often takes its riſe from their drinking cold water when over hot; or the ſuppreſſion of ſome evacuation from their heels, drying up the greaſe too quickly,

or the like. Sometimes it ariſes from a peccant acid in the blood, from whence the blood becomes coagulated, and the membranes are vellicated to throw off an offending acid.

The cauſes of theſe inflammations, are to be expected from a very cold air, cold water, eruptions driven to the ſtomach, the ſudden ſtopping of a ſevere purging, a ſouthern atmoſphere, and rainy ſeaſons; for then the air is lighter, and preſſes the blood leſs forcibly out of the capillary arteries of the lungs towards the left ventricle of the heart; with a leſs impetus alſo it ruſhes into the jaws; and the ſmall arteries there diſperſed, being too much dilated by means of the ſmall reſiſtance which the weak preſſure of the air occaſions, theſe are the reaſons why the blood ſtagnates, and moves more heavily in its circuit.

Hence ariſes a violent inflammation of the lungs. The parts affected are the pulmonic or bronchial arteries, or the lateral lymphatics; the blood being either obſtructed in the former, or propelled into the latter. Theſe inflammations of the lungs too often terminate in a dangerous conſumption, which, if not ſpeedily remedied, the death of the horſe muſt inevitably be the conſequence. In theſe caſes you muſt not be too buſy with the lancet; we adviſe no blood to be drawn on any account. The method of practice here laid down, we flatter ourſelves, will be found more uſeful than any yet offered by other authors, if ſtrictly adhered to.

Take

Take pectoral oxymel, two pounds; purified nitre, an ounce; barley-water, one gallon; mix them well together warm, and give the horse a pint of it three or four times every day.

Or,

☞ Take elecampane-root and Florentine orris, of each three ounces, in gross powder; boil them in twelve pints of water to eight pints; then strain it, and add gum ammoniac, four ounces, dissolved in a pint and a quarter of good vinegar; honey, two pounds; Russia castor, gentian-root, and savin in powder, of each one drachm and a half, boil them up, and skim off the froth and strain it. Every morning, noon, and night, give the horse a pint of it either blood-warm or cold, as it is immaterial whether warm or not.

This will incide tough phlegm, open the obstruction of the bronchia of the lungs, and may be much depended on in shortness of breath and wheezings; and if properly applied, may put a stop to the disease commonly called *broken-wind* in horses, if taken in time.

## *SECT. XI.*

### OF ASTHMAS, OR BROKEN-WIND AND CONSUMPTIONS.

THE disorder commonly called *broken-wind* in horses, is an asthma; a difficulty of breathing by some fault in the lungs, and is a very difficult

difficult and laborious reſpiration, it may be owing to the compreſſion, coarctation, or obſtruction, of the pulmonary veſſels.

But if the horſe has a continual difficulty of breathing, it is from a compreſſion of the veins, bronchial veſſels, pulmonary viſiculæ or nerves; it ſometimes is occaſioned from a collection of water in the animal's ſtomach, or from an abſceſs, tubercles, polypus in the blood-veſſels, adheſion of the lungs to the pleura, or tumours and inflammations in the ſtomach, ſpaſmodic conſtriction, coarctation, or irritation of the organs of reſpiration. If this diſorder is occaſioned from the horſe being plethoric, bleeding and purging with gentle exerciſe will remove it, if taken in hand in the early part of the diſeaſe, but if from other cauſes, it muſt be treated as hereafter directed; and if it does not give way in a ſhort time to the preſcriptions here laid down, it generally ends in conſumption or dropſy. But before the animal falls into a confirmed ſtate of this diſeaſe, you will obſerve he will for ſome time be violently afflicted with a very obſtinate, dry, huſky cough, without the leaſt ſigns of ſickneſs or loſs of appetite, but much diſpoſed to foul feeding, and drinking more water than ordinary. After bleeding the horſe give him the following purge:

Take jalap and Barbadoes aloes, in fine powder, of each half an ounce; mercurius dulcis, three drachms; ſaffron, two drachms; oil of anniſeeds, half

half an ounce; and with a little wheat flour and a ſufficient quantity of buckthorn ſyrup, form a ball, to be given immediately after bleeding, and be particular in working off this purge with warm bran and water; no cold water to be given the day the animal takes the phyſic. This purge may be adminiſtered two or three times in the courſe of a month. The days he does not take the purging medicine give him as follow:

Take aſſa-fœtida and gum-ammoniac, of each three ounces; ſquills, ſix ounces; aloes, two ounces; cinnabar of antimony, half a pound; pill ſtyrace, two ounces; gum-arabic in powder, four ounces; with a ſufficient quantity of honey make it into a paſte, and give the horſe the ſize of a pullet's egg every evening and morning.

Or,

Take flowers of ſulphur, one pound; Locatelli's balſam, four ounces; flowers of coltsfoot, horehound, and ſaſſafras in powder, of each three ounces; bay-berries, two ounces and a half; oil of anniſeeds, one ounce and a half; with a ſufficient quantity of molaſſes or honey make it into a maſs, and give the horſe two ounces of it morning, noon, and night.

Or,

Take eight heads of garlic, cut up ſmall and ſtamped in a mortar; balſam of ſulphur aniſated,

ſated, an ounce; grains of Paradiſe, cummin and fenugreek-ſeeds, of each four ounces; with a ſufficient quantity of liquorice-powder and honey, make it into a ſtiff paſte. Two ounces is a doſe morning and evening.

But, after all, if a conſumption takes place, or indeed if it does not, and the diſorder proves ſtubborn to be removed, you may adminiſter the drink made of Ruſſia caſtor, gentian root, &c. as ordered in the ſection for the cure of the Peripneumony, marked thus ☞, page 213.

Every time you feed the horſe, you may add to his corn an equal quantity of linſeed, fenugreek-ſeeds, annis, fennel, and carraways, about half an ounce of each mixed together. Notwithſtanding theſe helps, if the horſe grows poor and emaciated, his eyes appear hollow, his ſpirits low, and given to ſweat much on little exerciſe, a continual hollow cough, rattles in the throat, and looks ghaſtly, you had need give up every hope of ſaving him to do you any future ſervice, becauſe the expence will be much more than the profit you may ever expect, when the diſeaſe is out of the reach of medicine.

In the beginning of this diſorder every remedy preſcribed in colds is exceedingly uſeful, and ſometimes ſcalded barley with his bran inſtead of oats; and the leſs hay he is allowed in theſe diſorders of the lungs the better.

SECT.

## SECT. XII.

### OF THE GLANDERS, AND CONSUMPTIONS OF THE LUNGS.

AS the glanders appear to be an affection of the glands of the throat, whether from catching cold, unwholeſome food (which renders the blood poor and viſcid) or from the bad conſtitution of the air producing ſuch diſorders; from either of theſe cauſes, the horſe muſt be managed in much the ſame way: but the buſineſs is to take the diſtemper in its firſt ſtage, and nip it in the bud: for, after the matter or running has acquired a malignant and corroſive quality, whereby the ſoft ſpongy bones in the noſe are become carious or rotten (which may be known from the ill colour, ſmell, &c.) when this is the caſe, it is paſt remedy, or at leaſt the remedy is worſe than the diſeaſe.

In the firſt place, the horſe is to be kept very warm, and fed with clean good food; as ſweet, well-ſhaked hay, oats ground, and ſome of the rougher ſeeds taken out, maſhes, and the like, with a continued uſe of warm water and oatmeal, for ſome time; and of the latter, oatmeal, be not too ſparing; for the glanders are occaſioned oftentimes through poverty and lowneſs of fleſh. Therefore, as diſeaſes are cured by their contraries, what affords good wholeſome nouriſhment, and adds ſpirits to the blood, muſt undoubtedly be of ſervice in this caſe.

Secondly, bleeding is proper in the beginning of the diſtemper, that is, before the humours have too far affected the glands or kernels about the upper part of the windpipe; though indeed many horſes are affected with ſwellings of the glands of the throat while they are at graſs, eſpecially in winter, which continue long upon them before we ſee them, or any proper care is taken; inſomuch that they indurate or harden, and would turn out like a boiled potatoe; and when thus hardened, they are unfit to perform ſecretion. But here it may not be amiſs to ſhew the reader the form or ſtructure of a gland, and then he may be the better qualified to judge of glandulous diſorders, which are really very numerous; and it is great pity more pains are not taken to ſet their doctrine in a true light; though of late years we are better acquainted with their ſtructure and mechaniſm.

The ancients believed the glands were as ſo many ciſterns, which contained certain liquors, by which the blood being fermented, threw off the humours refined by the excretory or diſcharging ducts or pipes; but as theſe ferments muſt neceſſarily mix with the blood, ſo they muſt be exhauſted, and carried off by the blood into the veins, and becauſe all the liquors in the body are ſeparated from the blood, there muſt be another ferment to ſeparate more: but this ſecond ferment is as liable to the ſame fate as the firſt;

and

and therefore there muſt be an infinite ſeries of ferments in the body; which is abſurd to imagine.

If it ſhould be objected that the ferments are not carried off with the blood, they muſt be ſtopped by the ſtructure of the glands; but then there will be a ſecretion without a ferment, which is now the common opinion.

Some think the glands are tubes, whoſe orifices, differing in figure, admit only bodies of ſimilar figures to paſs through them; but this (though a plauſible conjecture) is demonſtrably falſe; for beſides that, liquors are ſuſceptible of all figures, and that bodies of any figure, and a leſſer diameter than that of the gland, will paſs through; and that even a body of a ſimilar figure, and equal diameter with that of the orifice of the glands, may be preſented innumerable ways, and not be able to paſs through, whilſt there is only one way it can paſs.

All the veſſels in an animal body are conical or cylindrical, and conſequently there is no difference in the figure of their orifices; for the preſſure of a fluid being always perpendicular upon the ſides of the veſſel that contains it, and equal at equal heights of the fluid, if the ſides are ſoft and yielding, they muſt be equally diſtended or ſtretched out, that is to ſay, a ſection perpendicular to the axis of the veſſel muſt be a circle, and conſequently the veſſel muſt be either cylindrical or conical; and this is agreeable to the ac-

counts of the niceſt anatomiſts, who tell us that a gland is nothing elſe but a convolution (or winding together in a bundle) of ſmall arteries, whoſe laſt branches are cylindrical, or, which is the ſame thing, part of an infinite cone. A gland therefore being long, nothing elſe but the branch of an artery, whoſe fartheſt extremity becomes the excretory duct or diſcharging pipe of the gland, it is next to be known how ſuch a ſtructure can ſeparate from the blood only ſome of its parts, and how different glands may ſeparate different parts of the blood.

If ſuch a fluid then is to be drawn off, as conſiſts of the ſmalleſt particles of the blood, let that orifice of the glands, which is inſerted into the artery of which it is a branch, be ſo ſmall as to admit only the ſmalleſt particles of the blood, then theſe, and theſe only, will enter this gland, and the fluid, which paſſes out of this other extremity of the tube, or the excretory duct, muſt be ſuch as is required.

If the particles of the blood, which are of the next ſize or magnitude, are required to be ſeparated, let the orifice of the glands be ſo large as to receive thoſe ſecond particles, but ſmall enough to exclude all larger particles; then theſe ſecond particles, together with the firſt or ſmalleſt, will enter the gland; but becauſe the liquor to be ſecerned, or ſeparated, is to conſiſt only of the ſecond ſort of particles, that is, the ſecond ſort of particles only are to flow out at the extremity of the tube or excretory duct; therefore we are to ſuppoſe

poſe that this gland (which is only the branch of an artery, and differs in nothing from a common artery, but in the narrowneſs of its channel) has branches which are wide enough to receive the ſmalleſt particles only, and carry them off into the veins; ſo that as both ſorts of particles will paſs off through its branches, and a fluid, conſiſting chiefly of the ſecond ſort of particles, will arrive at the excretory duct or extremity of the convoluted tube.

Thus the number of branches may be ſo great, as to draw off moſt of the ſmalleſt particles before the ſecond ſort of particles arrive at the excretory duct; ſo that the liquor to be ſecerned or ſeparated may conſiſt of both theſe ſorts of particles mixed together in any proportion, according to the number of branches.

If a fluid conſiſting of a third ſort of particles larger than any of the former, is to be ſecerned, the orifice of the gland muſt be juſt large enough toa it ſuch particles, and none bigger; and the branches of the gland muſt be ſmall enough to exclude the largeſt particles, and big enough to receive the leſſer; and according as the number of branches is either greater or ſmaller, the fluid which runs out of the excretory ducts will conſiſt either of the largeſt particles, or of all together mixed in any proportion.

And thus we may underſtand how a liquor thicker than the blood itſelf may be ſtrained off from

from the blood, if the orifice of the gland be ſo big as to admit particles of any ſizes, and the branches ſo numerous as to draw off the thinner parts, before the thicker arrive at the excretory duct.

We could illuſtrate this theory by diagrams, and ſhew more plainly how, and in what manner, the ſeveral humours of the body may be ſeparated from the blood, which muſt be either compoſed of ſo many humours as are ſeparated from it, or otherwiſe it muſt contain a few principles, which mixed altogether form the blood, and thus, variouſly combined, form the different humours that are drained from it; as a few rays of light, of different refrangibilities, mixed altogether, produce a white colour, but variouſly combined exhibit all imaginable variety of colours. And it is not at all probable, that the blood, in which we diſcern but two diſtinct parts, ſhould be compoſed of near thirty ſimple humours, for ſo many do the glands ſeparate from it; nor is it agreeable to that ſimplicity which nature conſtantly affects in all her operations.

Since therefore the ſeveral humours are formed by the various combinations of a few particles which compoſe the blood, and that each humour is ſecerned and ſeparated by glands placed moſtly in ſome one part of the body, as the gall which is ſeparated in the liver, and the urine in the kidneys, the particles of blood muſt fall into ſuch combinations as are fit to form gall in the liver, and urine in the kidneys, and ſo of others; and if this

this was not the caſe, the glands could never ſeparate ſuch humours of the blood. And as all the humours are compoſed of a few different particles, the greater will be the number of particles combined to form bile, and a greater quantity of bile will be ſeparated, the fewer there are of all other combinations at the liver. Such combinations therefore as are fit to form the humours proper to paſs through the glands, where theſe combinations are formed, being there only requiſite, will be there moſt numerous; and therefore, wherever the particles of blood are moſt diſſolved, there will be placed ſuch glands as ſeparate humours, which conſiſt of the moſt ſimple combinations, or of particles which do the moſt eaſily combine; and at the greateſt diſtances from theſe will be ſituated the glands which ſecern or ſeparate humours, conſiſting of the moſt compound combinations, or of particles which do the moſt ſlowly unite. And between theſe will be all the other glands, which, according to either extreme, will ſeparate humours more or leſs combined, or compounded of particles which do more quickly or ſlowly combine together.

By the thinneſs of the liquor in the pericardium, or bag ſurrounding and incloſing the heart, and that which paſſes through the kidneys, the particles of blood ſeem moſt diſſolved at and about the heart. For here we not only find the effect

of

of ſuch diſſolution in the ſecretions, but likewiſe we are acquainted with the cauſe of it, viz. the force of the air in reſpiration breaking the globules of the blood; which force is demonſtrable to exceed the preſſure of a hundred pounds weight upon the ſurface of the lungs in a human body, and much more in a horſe, whoſe lungs are far larger than ours. Nor is it evident only from the cauſes and effects, that the blood is here moſt diſſolved, but likewiſe from the very methods which nature takes to prevent the effects of this diſſolution in ſome particular places at a little diſtance from the heart; for, the bile or gall, and ſeed of animals, being thick humours, compoſed of particles which combine but ſlowly together, and it being requiſite they ſhould be ſeparated where the liver and teſticles are placed, nature has made uſe of particular contrivances to give the particles, which were to form theſe humours, more time to combine than they would have had otherwiſe, being ſo near to the heart.

For the formation of the gall, ſhe has contrived the vena portæ, and the ſpleen. Through the firſt the blood moves near two hundred times ſlower (and through the laſt altogether as much) than otherwiſe it would have done; and that the particles which form the ſeed might have time to combine, the orifices of the ſpermatic arteries are contracted, and they likewiſe ariſe from the vena cava a little below the emulgents, at a great diſ-

tance

tance from the teſticles, contrary to the common courſe of nature; by which means the blood is one hundred and fifty times ſlower or longer in going to the teſticles or ſtones, than otherwiſe it would have been.

At the greateſt diſtance from the heart, the viſcous liquor of the joints is ſecerned, as alſo ſome other liquors, which do not require any combinations, as the lympha or watery humour, which may be ſeparated any where. And all theſe different combinations, which form ſo many diſtinct fluids, ariſe from an attractive power in the parts of matter, which, though it be equally diffuſed through the whole maſs, yet according to the different denſities of particles, and the figures of their parts, ſome ſorts of particles will be ſoon united, while others require a longer time to be joined together; ſome will cohere or ſtick together more firmly than others, and particles of one kind will have a greater tendency to unite with thoſe of another ſort, in a certain portion of their ſurface, than in any other. We now proceed to give ſome account of the diſeaſe.

Good, clean, and eaſy-digeſtible provender, warm clothing, with bleeding, &c. are proper in the firſt ſtage of the glanders.

Secondly, a continued uſe of the following mixture every morning, for at leaſt a month, will perform the cure, if any thing can touch the root

of the diſtempers when only from a cold, and before the bones of the head are corroded.

Take of tar and balſam capiva, of each one pound; incorporate them well with the yelks of twenty eggs; molaſſes or honey, two pounds; mix them in three quarts of good ſtrong beer and one quart of brandy, and give the horſe half a pint of it twice every day.

Now to the improved plan of this diſeaſe; almoſt every author who has written upon the diſorder poſitively affirms, that there are ſeven kinds of it, in which one and all of them are groſsly miſtaken; though for the ſatisfaction of the reader, together with a deſire to put the practitioner entirely out of error, we here lay down thoſe diſeaſes which they call glanders, with their different cauſes, and methods to treat them, at the ſame time proving that a glandered horſe never yet had his lungs the leaſt affected, but that the diſeaſe lies entirely in the head alone.

The firſt is from ulcers of the lungs, the purulent matter riſes up the trachea, and diſcharges itſelf through the noſtrils, ſometimes in lumps, and at other times a white thin liquor.

The ſecond kind of ſuppoſed glanders is alſo a defluxion of the lungs, which too often ariſes from the drying up of wounds or ulcers, which have been brought on the animal from hard labour.

The

The third is that malignant matter diſcharged from the diſorder called the *ſtrangles*, that immediately falls upon the lungs, and runs off by the noſtrils. The cauſe is from mal-practice.

The fourth is when the acrimony of any diſeaſe falls upon the lungs, ſuch as the farcy, and the like:

The fifth is from taking a ſevere cold, after hard exerciſe.

The ſixth is the acrimonious matter in the ſtrangles, returning into the blood for want of aſſiſtance in the cure, which falls on the lungs. Theſe are called the glanders, and are the opinions of moſt authors, which, from the following diſcourſe, you will ſoon diſcover were utterly ignorant of the diſeaſe, for there are none of the above kinds of glanders (meaning pulmonary diſeaſes) but what will immediately give way to bleeding, purging, and other remedies, as before deſcribed in ſection for colds, or peripneumony.

But the true cauſe of this tremendous diſeaſe is from an inflammation of the glands, and membrane that lines the noſtrils and the cavities thereof, and when not ſpeedily removed, forms matter which erode and ulcerate the bones of the head. This moſt likely may ariſe from a fever being tranſlated on theſe parts, and is in its nature local; and that the true ſeat of it certainly is in the pituitary membrane, which lines the partition along the inſide of the noſe, the maxillary ſinuſes, or cavities above the orbits of the eyes.

And

And in a true glandered caſe, you may depend upon it that the whole viſcera, as the lungs, liver, &c. are as ſound and perfect as if nothing ailed the horſe; conſequently the preſent mode of attempting to cure the glanders is unwarrantable, erroneous, and invalid. For inſtance, upon the numerous diſſections of the heads and ſtomachs of glandered horſes, we have found the lungs entirely ſound, but the cavities of the heads were always filled with a viſcous, ſlimy matter; the membrane which lines the noſtrils and their cavities was inflamed, thickened, and corroded, full of ſordid ſtinking ulcers, which had eat into the bones of the ſkull; this is the laſt ſtage of the diſeaſe, and when thus affected no cure can ever be expected.

But in its firſt ſtate, fumigations up the noſtrils of ſulphur on hot irons, or the following powder may put a ſtop to the diſeaſe:

Take maſtic, frankincenſe, and myrrh, of each an ounce, in powder; to which add factitious cinnabar, two ounces; a little of this ſhould be placed upon a hot heater, and a blanket thrown over the horſes's head, and let him receive the fume up his noſe, ſtirring the powder about with a tobacco-pipe to make it burn. This may be done twice a day; keep him warm, and give him warm maſhes.

If

If this method does not anſwer, and you are certain the horſe has the true glanders, the trepan muſt be applied, which the horſe will ſuffer very little inconvenience from, if done by an expert hand.

Before you make uſe of the inſtrument for trepanning, called the *trephine*, you are to take off the ſkin and membrane that covers the ſkull, that the inſtrument may work itſelf eaſily into the bone. It ſhould be fixed about half an inch below the eye, a little on one ſide the centre of the upper part of the noſe, upon the frontal ſinus; becauſe if it is applied higher, it might run upon the brain, and the operator not being an expert ſurgeon, it would endanger the horſe's life. About three inches below this perforation, another may alſo be made as a drain for the matter that lurks above it; indeed if there were three or four, two on each ſide, they could do no harm, but much good might derive from ſuch experiments if attended to by men of ingenuity. It will be neceſſary to remind the operator that the trepan ſhould be directed toward the interior part of the noſe, that the inſtrument might work and be introduced above the roots of the teeth.

If in the maxillary ſinus, inſtead of one, there happen to be two bony partitions, it will be neceſſary to work the inſtrument through them both, though it very ſeldom happens that there are two, though in ſome horſes there are two, in others only one.

Upon

Upon the part a little below the eye, where the inſtrument is here ordered to be introduced to perforate the head, is meant to be upon the maxillary ſinus, which is the only proper place for the operation to be performed.

After the trepan has been applied, and by probing the part of the ſkull it is found to be corroded, and too far gone to expect ſucceſs, the better way, to prevent unneceſſary trouble, would be to ſhoot the animal. But if the operation is performed in time, we make no doubt but a cure may abſolutely be obtained, if conducted as here directed:

Take mercurius dulcis, two ounces; gum-arabic, in powder, one ounce and a half; one ounce of the ſtrong decoction of oak bark, made with lime-water; and an ounce of bole-armenic, in powder; mix and ſhake them well together for an injection.

Or,

Take corroſive ſublimate levigated, one drachm; lime-water, two quarts; mix for an injection.

Or,

Take white and blue vitriol and alum, of each two ounces, calcine them in a crucible, and pulveriſe; then add camphor and bole-armenic, of each one ounce; rub them well together, and put them into two quarts of vinegar and water, made hot, equal quantities, mixed in a large

large bottle; keep it close corked, till cold, and then it is fit for an injection.

Either of the above injections (cold) may be injected with a pint syringe into the upper and lower cavity, the better part of a pint several times in the course of the day; after each time of syringing you may place a cork into each hole where the trepan was introduced, and take them out occasionally.

And in order to purify the contaminated blood and juices, and to break down the moliculæ, we advise the following mercurial preparation to be well rubbed into the insides of the horse's mouth, upon the salival glands, that the absorbent vessels may take it immediately up into the circulation:

Take mercurius dulcis and corrosive sumlimate mercury, finely levigated, of each three drachms; compound tastaceous powders, an ounce; rub them all well together in a glass mortar, and then divide them in parcels of fifty papers; and rub one of them into one or other side of the salival glands, with your finger, for about five minutes every morning and every evening; if the horse appears to be uneasy while chewing his provender, so as to portend a sore mouth, in that case, stop a day or two till he recovers; then apply them again twice every day. There is no other method of introducing mercury into the circulation to act, quick enough upon the disease in question.

While

While the animal is under the mercurial courſe, by abſorption, it will be highly neceſſary to give him the following balls:

Take gum-guaiacum in powder, half a pound; cinnabar of antimony, ſix ounces; ſaſſafras, in powder, four ounces; mix them together into a paſte with a little wheat-flour and a ſufficient quantity of molaſſes; then divide them into balls of an ounce and a half each, one of which to be given to the horſe every night and every morning. Warm maſhes of bran and water, with a little good ground malt in them, ſhould not be neglected, and gentle exerciſe daily. Keep the afflicted horſe by himſelf, otherwiſe the diſorder may be taken by thoſe which are ſound, as the diſeaſe is ſometimes infectious.

## *SECT. XIII.*

### OF A QUINSY, COMMONLY CALLED THE STRANGLES.

IF the practitioner rightly manages this diſorder, there is not the leaſt danger but that the horſe will ſoon recover.

The ſigns of this diſeaſe are, a ſwelling under the throat between the two jaw-bones, and the muſcles of the tongue are very much affected; but

but in the human ſpecies there is much more danger of a cure than in quadrupeds.

In this diſorder an inflammatory fever enſues, which is cauſed from a defluxion upon the thorax, fauces, and the parts adjacent.

There are three kinds of it which give way to the names of *ſtrangles*, *baſtard-ſtrangles*, and *vives*.

When the internal muſcles of the larynx are affected, without the appearance of a tumour, then it is called *cynanche*.

When the external muſcles of the larynx are affected, without a tumour, it is then called *paracynanche*.

When an internal tumour is impeding reſpiration, it is called *ſynanche*.

And when the external muſcles of the fauces are inflamed, accompanied with a tumour, it is then called *paraſynanche*.

Whatever impedes or ſtagnates the fluids, immediately compreſſes the muſcles, which brings on inflammation, which generally ariſes from an obſtructed perſpiration after taking a violent cold; this is the cauſe of the diſeaſe.

If no ſwelling appears, the diſeaſe in that caſe may prove mortal; but if a large tumour ſoon appears, the diſeaſe will be eaſily conquered, and a laſting cure may be expected; but to begin the cure it will be proper to make a cataplaſm or

pultice, ſpread it upon ſome courſe cloth, and ſew it tight about the ſwelling with a packing-needle and twine.

Take leaves of mallows, and of marſh-mallows, of each ſix or eight handfuls; two pounds of white lily roots, linſeed, and fenugreek, in powder, of each one pound, and half a quartern of of bran; boil them all together in a ſufficient quantity of water till they are ſoft, then beat them up together and boil them again to a thick pultice; apply this warm night and morning, after ſtirring a pound of hogs-lard into it. When the matter comes forward, the tumour is to be opened and the matter ſqueezed out, but the ſame kind of pultice to be conſtantly and regularly applied warm, and in a few days the whole will be run off.

Bleeding and purging muſt be omitted till the matter is all entirely drawn away by the above cataplaſm; after which, give him the following cathartic once, twice, or three times:

Take jalap and aloes, in powder, of each ſix drachms; ſal polychreſt, two ounces; ſal diureticus, half an ounce; buckthorn ſyrup, two ounces and a half; mix them together into a ball for one doſe. It may be repeated every fourth day, for three times, if the horſe is not too weak to bear it.

Warm maſhes from the time the animal is taken ill, till the humour be diſperſed, ſhould not be

be neglected; and warm water to be given to him the day he takes the phyſic.

## *SECT. XIV.*

### OF THE ANGINA, ERRONEOUSLY CALLED ANTICOR.

THIS diſorder is an inflammation in the gullet, or throat, which occaſions a difficulty of deglutition and reſpiration.

It proceeds from the ſame cauſes which bring infinite diſeaſes on horſes, ſuch as hard riding, expoſing a horſe to the cold, and giving him cold water to drink when he is hot, foul feeding, and whatever elſe may cauſe a ſudden ſtagnation of the fluids. The ſigns are, firſt, all thoſe that accompany a fever; for an anticor, while it is internal, never wants a fever to attend it; but when it ſhews itſelf externally, the fever begins to abate; unleſs it continues to be both external and internal.

So long as the inflammation continues in the gullet, the horſe forſakes his food, and though he has frequent inclinations to drink, and his water be made moderately warm, the firſt gulp deters him from meddling with it again, until he has forgot the pain and agony it put him into. And

the pain of the gullet is yet more manifeſt from this (and we believe every practitioner muſt have made the ſame obſervation) that whenever a drench is given him, he ſtaggers, and ſeems as if he would fall down, and makes ſeveral ſhort interrupted groans, or rather gruntings, and ſometimes will break out into a cold damp ſweat about his ears.

The cure muſt be begun by bleeding, and that need not be very ſparing, for this diſeaſe ſeldom happens to horſes that are poor and low; and here we alſo approve of breathing one or other of the veins on the hinder part, to cauſe revulſion; the thigh vein as proper as any; in this caſe, after bleeding, the following clyſter may be given:

Take two handfuls of barley, two ounces of ſal polychreſt reduced to a fine powder, boil them in two quarts of water for the ſpace of an hour, add to the decoction two ounces of prepared ſal ammoniac; a quarter of a pound of freſh butter, and one ounce and half of oil of rue. Let this be given blood warm, and repeated twice a day or oftener.

If he takes no food, nothing muſt be given him but moiſtened hay and ſcalded bran, and what elſe muſt be chiefly ſuch things as are proper to keep down heat and inflammation, and abate the feveriſh ſymptoms; for which purpoſe, we recommended after bleeding, thoſe remedies that

that are proper to promote ſweat. Therefore, let the following drench be prepared for him:

Take treacle water and carduus water, of each one pint; diſſolve in theſe two ounces of old Venice treacle; and after this has been adminiſtered, clothe him well, and give him a little warm water to drink; or inſtead of the treacle and carduus waters, a pint of ſtale beer, mixed with ſmall beer, may be uſed; nothing is ſo effectual to remove inflammations, eſpecially after bleeding, as ſweating; and therefore, if you find it difficult to promote ſweat, you may give him the following ball:

Take of Venice treacle, two ounces; volatile ſalt of hartshorn, thirty grains; ſaponaceous pill, two drachms; camphor in powder, thirty grains; powder of liquorice or ſaſſafras, each one ounce, and ſimple ſyrup ſufficient to make it into a paſte; let this be given after the operation of the clyſter is over. And if the ſymptoms begin to abate, you may venture to give your horſe a gentle purge, for which purpoſe, the cooling purging balls in the Appendix will anſwer every end.

Or,

Take ſcammony, prepared with the fumes of brimſtone, two ounces; diaphoretic antimony, one ounce, and the ſame quantity of the cryſtals or cream of tartar, and ſal polychreſtum; make them into a fine powder.

The

The doſe is two ounces, made up into a ball with butter and flour, to be given with the uſual precautions.

This medicine not only purges the belly moderately, but alſo keeps the pores open, and carries off a great deal by ſweat and inſenſible tranſpiration.

If the ſwelling appears outwards, and at the ſame time the other ſymptoms abate, you may then leave off purging; for what is intended by that evacuation, is chiefly to diſperſe the inward diſorder; and then you are only to apply ripening cataplaſms and pultices, allowing him at the ſame time ſal prunella, ſalt-petre, or the the ſal polychreſtum diſſolved in water.

The cataplaſm for this purpoſe may be made of the following ingredients:

Take linſeed and fenugreek ſeeds, of each two ounces; camomile, melilot, or their flowers, of each four handfuls; boil them over the fire till moſt of the moiſture be evaporated, then paſs them through a ſieve, and add a quantity of cow-dung equal to the other ingredients, with a ſufficient quantity of ox or ſheep-ſuet to keep it moiſt. Let this be applied twice a day pretty warm.

Or,

Inſtead of this compounded pultice, cow-dung alone, applied warm on the part, with a ſufficient

ficient quantity of hogs-lard, or ointment of marſh-mallows, may be ſufficient to bring the ſwelling to maturation.

When it grows ſoft, and the matter ſeems ready for a diſcharge, it may be opened in the dependent lowermoſt part, by the application of a hot iron, or any ſharp inſtrument; keeping a doſſil in the mouth of the wound until the running abates, and likewiſe applying compreſſes and convenient bandages to keep the elevated ſkin cloſe to the ſubjacent fleſh, that it may be the ſooner united; but if the cavity of the impoſtumation be large, it will not be amiſs to lay it open with a hot knife, an inch or more, or if you would chuſe to avoid a ſcar, uſe a cold ſharp inſtrument.

The cure may be finiſhed with applying only the unguentum baſilicon, or a digeſtive made with turpentine, the yelks of eggs, or honey, with a moderate mixture of brandy or ſpirit of wine; and if any foulneſs appears, or if it heal too faſt, or ſpongy ſoft fleſh ariſe, pledgets dipped in copperas water, or a ſolution of blue vitriol, may be applied, which will keep it ſmooth and even.

But if the ſwelling increaſe very faſt, which oftentimes happens, and that there is no tendency to digeſtion, but that it ariſes up towards the neck, affecting all the muſcles in thoſe parts, the horſe will then be in danger of ſuffocation; and unleſs ſpeedy relief be given, he muſt ſoon be ſtrangled.

Therefore, beſides repeated bleedings, if he is not too much wore out, it will be convenient to take

take a hot ſearing iron, and apply it to five or ſix places on the lower part of the ſwelling, cauteriſing thoſe parts, that they may be ſpeedily brought to matter, which may alſo be dreſſed with tow or dipped in tar and turpentine, mixed before the fire, and applied warm; and by giving pain in thoſe dependant and inferior parts, you cauſe the humours to flow downwards from the ſwelling; and by making vents that are ſufficient to diſcharge them, you anticipate the pain, and take off from its exceſſive violence, which is alſo an extreme to be avoided, neither need you be afraid of the ſwelling that may caſually happen in the fore legs, and perhaps even in his limbs, by cauteriſing, for that cannot be of ſuch ill conſequence as when it is upon the neck and throat, neither will it be of any continuance if due care be taken of the iſſue.

The Sieur de Solleyſell recommends the making of ſmall inciſions with a fleam or lancet, in eight or ten places on the ſwelling, and to thruſt into the holes between the ſkin and the fleſh, pieces of the root of black hellebore, of the bigneſs of the tag of a point; and if the tumour be very large, he recommends the uſe of white hellebore, at the ſame time chaſing the part with the ointment of marſh-mallows. The roots, by their hot burning quality, draw down and increaſe the ſwelling; and the ointments are to ripen the incloſed matter, and fit it for a diſcharge.

The ſame author alſo recommends the uſe of betoires or ruptoris, for drawing an immediate flux

flux of moiſture from the diſeaſed part. Theſe are ointments of the ſame nature with thoſe which are made to draw bliſters on the human body, and are compoſed of the like materials; and becauſe they may be uſed with much ſafety, we ſhall inſert two or three that are eaſily made, and will be found of no leſs efficacy than thoſe which are more compounded.

Take of baſilicon four ounces; black pepper and ginger, of each half an ounce; Spaniſh flies, two drachms. Let the flies, pepper, and ginger, be made into a fine powder, and incorporated with the baſilicon.

The following is yet more powerful:

Take a quarter of a pound of baſilicon; one ounce of red precipitate, in powder; half an ounce of euphorbium, and two drachms of the flies.

Or, the following, which is more efficacious than either of the former:

Take oil of bays, four ounces; euphorbium, in powder, two ounces; cantharides, or Spaniſh flies, half an ounce. Theſe may yet be made ſtronger, or weaker, according to the uſe they are put to. The way they are applied, is by ſpreading a little at a time upon the part affected, holding a hot bar of iron to make them ſink in; and this operation may be repeated as often as the caſe requires; but eſpecially until

they have drawn out a plentiful deal of reddiſh water. They muſt be ſparingly uſed on ſome parts, as will be particularized upon other occaſional remarks on bliſters.

## *SECT. XV.*

### OF THE DISEASES OF THE STOMACH; AND OF A DEPRAVED APPETITE.

AS the food of horſes conſiſts of the moſt ſimple productions of the earth, they cannot be liable to ſo many diſeaſes in their ſtomachs as the human ſpecies, and therefore when we obſerve a horſe loſe his appetite, we may very readily ſuſpect that diſorder to be a ſymptom of ſome other diſeaſe, or to be the effects of ſome ſudden accident or miſmanagement; for it is very certain, whatever cauſes the blood to flow, in any overgreat quantity, into the ſtomach, muſt be the occaſion of a plenitude and fulneſs of the veſſels, which, according to its degree, will injure the digeſtive faculties; and if it amounts to an inflammation, or if thoſe veſſels be very much diſtended, it muſt needs cauſe, not only a want of appetite, but a loathing alſo.

And thus we obſerve, in all fevers and violent colds, a horſe forſaking his food; and ſometimes we may take notice in him the ſame diſ-

like

like to eating after immoderate exercise, or after drinking cold water when he has been heated, or after a long and tedious day's riding in hot weather; and, in fine, after all those errors that may be the cause of fevers and most other sicknesses; and because such disorders very often go off without any other visible symptom than the loss of appetite, they are therefore very often attributed wholly to the stomach.

But the diseases of the stomach, which, properly speaking, produce the want of appetite, have not their immediate dependence upon any other disease, but proceed either from the quantity or quality of what is contained in it; and in this case the signs are different from the former; for in the one, the horse wholly forsakes his food; and in the other, he is dainty, yet he eats, though it be but little, and is capable of doing proportionable service.

And this imperfection, for the most part, proceeds from a lentor in the bowels, and costiveness, when a horse has stood some time in a stable, and has had full-feeding, without suitable exercise; for by that means, the stomach is not only too full, but the juices turn corrupted by their stagnation, and acquire some ill qualities that may take away the appetite, or cause a horse's appetite to be vitiated; and when the last happens, we often observe them, by a sort of instinct, crave after those things which are very different from their

natural food, as the eating of mud, or clay out of the walls.

But in handling the cure, we need ſay but very little concerning that ſpecies of want of appetite, which is often the ſudden effect of ſome accident, or ill management; for this is frequently cured by blood-letting alone; as it is, for the moſt part, no other than a ſymptom of a beginning fever, and of ſuch a one where the blood, if at all, is but little vitiated.

Wherefore, in any ſuch caſe, a quart of blood may be taken from the neck vein, after which may be adminiſtered ſuch things as are cooling, and fit to keep down a fever.

His diet ought to be ſcalded bran, and his water ſharpened as has been directed in ſuch caſes; and, with the aſſiſtance of moderate exerciſe, his ſtomach will ſoon come to him.

But when the want of appetite proceeds either from a conſtant foulneſs whereby the action of the ſtomach is hindered, that its ſides cannot meet together, ſo as to excite the ſenſation of hunger, or if it proceeds from a foulneſs in its contents; as for inſtance, if there be ſlimy matter engendered in it, either from raw undigeſted food, from the want of a free diſcharge of the dung, or if any ſharp corroſive matter be in it, cauſing a depraved appetite, or a ſenſation of hunger, by fits, as we ſometimes obſerve; the moſt rational method in all theſe caſes is, in the firſt place, to evacuate and purge the

the ſtomach by ſuch things as are appropriated either to ſweeten the juices, or attenuate the viſcid phlegm.

And this method ſeems the moſt reaſonable, with reſpect to horſes, becauſe, as we have elſewhere obſerved, they are no way diſpoſed to vomit, or throw any thing out of the ſtomach that has once entered into it; and that ſeems to be owing to the figure of the gullet, which is contracted more than in ſome other creatures, and has a ſpiral direction a little above its inſertion into the ſtomach; for had it been otherwiſe, though a horſe might have vomited as well as ſome other animals, yet as he feeds much with his head downwards, he would then, perhaps, have lain under the inconvenience of having his food fall ſometimes back again into the gullet, which would be very troubleſome to him; and we may likewiſe obſerve, from frequent experiments, if there be never ſo large a quantity of any vomiting medicine given to a horſe, it has no effect that way, but either works by a diſcharge of the dung, by ſweat, or inſenſibly upon the maſs of blood as an alterative.

And therefore purging medicines are, no doubt, the moſt appropriated to give immediate relief in all ſuch foulneſſes of the ſtomach as are of this kind. But if a horſe be coſtive, no purging phyſic ought to be given him but what is very moderate, unleſs the bowels are firſt cleanſed by the uſe

of

of clyſters. If the inteſtines be very full of dung, and if that be hardened when purging medicines are adminiſtered by the mouth, they ſometimes prove fatal to horſes; for when the phyſic cannot make its way downwards, it flings a horſe immediately into convulſions, becauſe he wants that benefit of nature which men and ſome other animals have, of throwing upwards. But we ſhall lay down the method that is proper to be uſed in thoſe diſorders.

And firſt, if the horſe be coſtive, the following emollient clyſter may be given, after he has been raked by ſome boy, or one that has but a ſmall hand.

Take of the roots of marſh-mallows, ſliced, half a pound; the leaves of common mallows, three handfuls; linſeed and fenugreek-ſeeds, of each two ounces; boil them in three quarts of water for the ſpace of half an hour, ſtrain the decoction through a courſe cloth, while it is hot, and diſſolve in it four ounces of honey, two ounces of common treacle, and ſix ounces of oil or butter. Let this be injected luke-warm, holding his tail cloſe down, as long as poſſible, and let it be repeated for two or three days, or until the horſe's body is open enough, and that there is a way made for purging. After which he may have the following drench given him:

Take

Take of the roots of gentian and zedoary, ſliced, of each two ounces; hyſſop and rue, of each two handfuls; the leaves of ſenna, two ounces; anniſeeds or fennel-ſeeds, powdered, an ounce; boil them in three pints of water to the conſumption of one pint, diſſolve in the decoction four ounces of lenitive electuary.

To be given in the morning, keeping him faſting two hours before and one hour afterwards; then he may be walked gently for an hour more, and when his phyſic begins to work, he may be permitted to drink warm water ſtrewed with oatmeal, or the following purging balls may be given:

Take of the beſt aloes, one ounce; diagridium, two drachms; galangal, in powder, half an ounce; cloves, half a drachm; make them into balls with flour and butter.

Theſe balls, or the proceeding draught, may be given with ſucceſs to recover loſt appetite; and may, for that purpoſe, be repeated as often as there is occaſion, which needs be but ſeldom, unleſs the horſe has been ſome conſiderable time without a good appetite; and in that caſe, he may be purged twice a week, for a fortnight or three weeks ſucceſſively; and the days he does not purge, the following powder may be given him

in

in a decoction wherein a handful or two of rue has been boiled:

Take gentian, in powder, two drachms; galangal, zedoary, and calamus aromaticus, of each a drachm and a half; cinnamon and bay-berries of each a drachm. Let these be pounded together, and be given in the decoction, or in a pint of white wine.

If the horse be of a delicate washy constitution, and unable to bear much purging, all that is necessary in that intention may be answered by clysters, with the use of scalded bran now and then; which we rather recommended before purging.

The above powder may be given every day, or for want of it what our common farriers oftentimes administer to restore appetite, viz. Garlick and rue, champed, and pounded with butter and flour, may be very serviceable, especially to strong robust horses.

But above all things, the use of chewing-balls, and constant exercise, is absolutely necessary; and with the concurrence of a few of those helps, above directed, will soon recover a horse to his appetite.

If you observe your horse mangle his hay, and continually nibbling mud and dirt, you may then very reasonably suppose his stomach to be foul, and

and out of order; nor is it improbable that this deſire after earth and mud, proceeds from an acidity and ſourneſs of the juices; for thoſe creatures, by a ſort of inſtinct, very often of their own accord; take to ſuch things as are proper to relieve them of troubleſome and uneaſy ſenſations; and this is very obſervable in dogs and cats; who are led; by the ſame inſtinct, to ſwallow rough blades of graſs in order to make themſelves vomit when they find their ſtomachs oppreſſed. Theſe are inſtances that are familiar; and known to every one; but natural hiſtory abounds with an infinite number of the like inſtances in other creatures; ſo that we are not to doubt but that an animal of the greateſt ſagacity; as a horſe certainly is, and as he is alſo as much expoſed to diſeaſes; if not more than any other creature; muſt therefore; when at liberty; often times be led to his own proper remedies; we could give ſome very odd inſtances of this in horſes; from our own obſervation; but we ſhall only here take notice of what relates to the preſent caſe.

They muſt needs have but little acquaintance in phyſic who do not know what virtue earths have in them; not only to dry up a ſuperfluity of moiſture; but ſome of them to imbibe and take off the acidity of ſour liquors; and it is; no doubt; from ſuch a depravity in the ſtomach; that a horſe leaves his ordinary food to eat dried earth or mud; and this he is forced to do from the crav-

ings of his appetite, and is often compelled to take up with the worſt for want of ſomething more efficacious. We once took an opportunity of gratifying a horſe in a very ardent deſire of this kind, who had ſuffered very much from his keeper, and had been often beat for eating clay out of the wall; we brought him a piece of chalk, the bigneſs of a man's fiſt, and laid it into the manger; he turned it over with his noſe ſeveral times, and at laſt broke off ſome of the corners, and eat them; whereupon, we took up the chalk to break it into ſmall pieces, and becauſe he thought we were going to rob him of it, he puſhed his head towards us with all the eagerneſs imaginable, and when it was broke he eat the greateſt part of it, and then fell immediately to the hay. The officer who kept him, told us he gave him more chalk afterwards, and obſerved he eat his hay the better for it; but being commanded to march ſoon after, he was perfectly cured by the exerciſe, and had no farther cravings of that kind.

This remedy is very eaſy, and may be had every where; or inſtead of it, burnt harts-horn in powder, which is yet much better, may be given; but thoſe remedies will be ſtill the more efficacious, if, previous to them, purging be adminiſtered, and afterwards conſtant exerciſe be given; there being nothing contributes ſo much to wear off thoſe diſorders as exerciſe, when it is moderate.

But

But the remedies prescribed in the following section, will also be useful in this case.

## *SECT. XVI.*

### OF THE HUNGRY EVIL.

THIS distemper generally proceeds at first from bad keeping, or excessive purging; but there are some horses who seem to be incurable, because, though they feed plentifully, their common and natural discharges seem, at the same time, to be more than proportionable to their feeding.

Most horses that have this infirmity upon them, are but of little value, therefore we shall spend but little time about it; however, since there may be some very good horses that have a voracious appetite after such cases as we have mentioned, and may be recovered, we shall lay down the most proper means that can be made use of for that purpose.

And therefore, since the hungry evil in them proceeds from emptiness, they ought, besides plenty of food, to have those things administered to them, that are proper to lubricate and soften the fibres of the stomach, and to lessen that sensation; for which purpose the leaves of mallows, and roots of marsh-mallows, should be boiled in their water, with liquorice; and their corn should

be mixed with mucilaginous ſeeds, as fenugreek and linſeed. But if he cannot be eaſily brought to the uſe of thoſe things in the way of diet, they may be given him after the following method:

Take the roots of marſh-mallows, two pounds; linſeed and fenugreek-ſeeds, of each four ounces; firſt pound the ſeeds, and then the roots, to a maſh, and afterwards make them into balls as big as a pullet's egg, one of which may be given in the morning, one about noon, and another in the evening.

The carminative ſtomach-balls may alſo be given in this caſe, eſpecially if the brimſtone be kept out of them; all fat unctuous medicines, for thoſe not only help to fatten a horſe, but take off thoſe violent ſenſations of hunger, that cauſe him to eat ſo voraciouſly, as is uſual in ſuch diſorders. —See Appendix for the aromatic or carminative ſtomach-ball.

## *SECT. XVII.*

### OF THE DISEASES OF THE INTESTINES OR GUTS, AND FIRST OF THE CHOLIC.

THE cholic, or gripes, which in the farriers' terms, though very injudiciouſly, is meant to ſignify moſt of the diſeaſes of the guts, is no other

other than the pain that accompanies all the particular diſorders thoſe parts are liable to; and, therefore, when a horſe is troubled with cholic-pains, the farrier ought diligently to enquire into the true cauſes thereof; for as no part is more ſenſible than the inteſtines, any thing retained too long in them, or any thing ejected or thrown out in an over great quantity, will on ſome occaſions bring a horſe into exquiſite torment; we ſhall therefore take particular notice of the different cauſes of ſuch diſorders, and ſuit the method of cure according to their ſeveral exigencies.

Horſes are ſeldom or never troubled with any other obſtruction in their bowels, except what proceeds from the dung hardening and obſtructing thoſe paſſages. We ſhall here add, that when the matter is pent up in the firſt paſſages, as in the ſtomach and guts, and putrifies there, the juices turn ſour, viſcid, and ropey, and fret the tender membrane which covers the inſide of the guts by the viſcidity; alſo the wind is entangled, which creates a ſwelling and diſtention, ſo that the belly becomes hard like a drum, and if the excrements be very much hardened in the great or ſtreight gut, they cauſe a preſſure upon the neck of the bladder, and hinder the paſſage of the urine ſo much, that a horſe cannot ſtale; ſometimes the fundament ſwells, and all towards the ſheath, which is very dangerous. A horſe in this condition muſt needs be in great pain, and

and even in danger of his life, if a ſpeedy relief is not had; therefore, in order to the cure, after he has been raked, and that with a great deal of caution, the following clyſter ought to be injected:

Take the leaves of mallows, marſh-mallows, and mercury, of each three handfuls; boil them in three quarts of water, for the ſpace of half an hour; to the ſtrained decoction, add lenitive electuary, four ounces; ſpirit of wine or brandy, half a pint; and oil or butter, half a pound. Let this be injected luke-warm, and retained as long as poſſible.

Four hours after the operation of this clyſter, if the horſe is not very much relieved, the following may be given:

Take leaves of mallows, and marſh-mallows, of each thee handfuls, as above directed; linſeed and fenugreek-ſeeds, cummin-ſeeds, and aniſeeds, of each two drachms; bay-berries, cubebs, and Jamaica pepper, of each one drachm; and dried mint, two handfuls.

Let theſe alſo be boiled for the ſpace of half an hour, or be infuſed in boiling water for the ſpace of two hours, and to the decoction add one pint of emetic wine. Let this be given as the former, and by the help of theſe, the adſtriction of the bowels, or coſtiveneſs, may be removed.

But

But if the horſe has, along with his coſtiveneſs, violent cholic-pains proceeding from wind, and phlegm, after the groſſer excrements are diſcharged ed the following clyſters may be given :

Take red-roſe leaves, two handfuls; tops of centaury and wormwood, of each one handful; boil them in two quarts of water to three pints; and in the decoction, diſſolve two ounces of diaſcordium, and half a pint of treacle-water, or ſpirit of wine.

This will infallibly take off the pain, and lie in the bowels like a cordial, without giving him the leaſt motion to dung, but compoſe and lull his ſpirits, and in a minute take off the violent ſpaſms, or gripes; if the pain ſhould chance to return, the ſame may be repeated, and if neceſſary, the doſe of diaſcordium may be enlarged to three ounces, or more; and there is hardly any kind of cholic-pain, but what may be carried off by it; and we have, by this method, cured horſes that have been in the greateſt miſery imaginable, and have ſeen them in a quarter of an hour riſe up to feed, that before were like to daſh out their brains againſt the walls.

Cholics and griping pains in the bowels of horſes, become ſuddenly mortal; that without any regard to other circumſtances they ought immediately to be removed; and if coſtiveneſs happens to continue, upon the uſe of the remedies which

which are prescribed for that purpose, the symptom will of course go off in the sequel of the cure; for, after the most urgent symptoms are removed, the next intention must be to destroy the cause of the distemper, otherwise it may return again.

Hence we recommend gentle purging, with the use of such things as are hot and penetrating, and this we do contrary to the opinion, though not altogether to the practice, of most people called Farriers, who believe costiveness to proceed from inward heat, whereas that heat is only the effect of costiveness, and not the cause, as is easily demonstrated, and is occasioned chiefly from cold phlegmatic tough matter in the stomach and guts, which bind up the excrements, when the guts are full and pressed upon it, and causes heat; therefore, as all hot spicey things are proper to cut and destroy those viscidities which cause the lentor, and harbour wind, they ought more or less to be exhibited in all intentions that are requisite to the cure of costiveness. The following purge may for that reason be given, and will be found very profitable after the violence of the cholic-pains are over, and the obstinate stoppages of the bowels are removed.

Take mallows and marsh-mallows, of each one handful; roots of marsh-mallows, six ounces; leaves of senna, two ounces; bay-berries and juniper-berries, of each one ounce; boil them in three pints of water, to one quart; strain out the

the decoction through a ſieve or courſe cloth, and add two ounces of ſyrup of buckthorn.

Or this;

Take mallows and marſh-mallows, of each two handfuls; ſenna, one ounce; jalap, in groſs powder, half an ounce; carraway-ſeeds, coriander-ſeeds, or fennel-ſeeds, of either an ounce and a half; boil them in the ſame quantity of water as above directed, to the conſumption of a third part, and in the ſtrained decoction, diſſolve four ounces of manna.

Or;

Take eight ounces of manna, two ounces of cream of tartar, diſſolve them in a quart of ſweet whey, and add eight ounces of the oil of olives, and as much ſolutive ſyrup of roſes.

Either of theſe may be made uſe of after clyſters have been injected, the horſe being kept from feeding two hours before, and two hours after; he may then be walked abroad for the ſpace of an hour, and upon his return, it would not at all be amiſs if there was a pint of olive oil, in two quarts of warm water, prepared for him with oatmeal, and adminiſtered through a horn; and the ſame quantity repeated four hours after.

This will help the operation of the phyſic, looſen and waſh down the viſcid and ſlimy matter, which not only fetters the excrements, but entangles the wind, which cauſes violent and ex-

ceſſive pain by its preſſure and diſtention of the colon or gut. But if the horſe be of ſmall value, and that it is not worth while to be at all this expence and trouble about him, the following purging drench may be made uſe of:

Take mallows and marſh-mallows, of each two handfuls, or four handfuls of common mallows, if marſh-mallows are not eaſy to be had; jalap in powder, two ounces; aniſeeds, or fennel-ſeeds, an ounce; boil them as above directed, and add to the decoction four ounces of common treacle.

Or,

Take half an ounce of the bitter-apple in powder, three drachms of aloes, of diagridium one drachm; make them into a ball with flour and butter; to be given as the former.

If your horſe's fundament be ſwelled, which ſometimes happens to that degree, before raking and clyſters are adminiſtered, that he cannot ſtale, becauſe when the excrements are hardened and pent up in the great or ſtreight gut, that being full, it preſſes upon the neck of the bladder ſo as to hinder the paſſage of urine; and if this ſymptom does not wear off ſoon after thoſe means have been uſed, recourſe muſt be had with all ſpeed to ſuch things as are proper to keep down inflammation, for which purpoſe, we recommend the uſe of the following decoction:

Take

Take of the red roſe-leaves, two handfuls; boil them in a quart of water for the ſpace of half an hour; add to the decoction a ſmall quantity of ſpirit of wine; and with a ſponge bathe his fundament and ſheath often.

This decoction ſhould always be made as warm as he can bear it, and the ſpirits mixed with it as often as it is uſed; to every two parts of the decoction one of the ſpirits.

His yard ought alſo to be kept up to his belly with a gentle bandage, becauſe the humours fall into it with a very eaſy influx, as it is both a ſoft and dependent part, by which means the ſwelling and inflammation are often kept up, after the firſt cauſe is in a great meaſure removed; and ſometimes proves the occaſion of a gangrene; and therefore, to keep that ſuſpended, the farrier, or groom, may take a piece of canvas ſix or eight inches broad, and fixing two ſtraps to each corner forwards, they may be brought one on each ſide over his flanks, and faſtened upon his reins; the hind parts ſhould have the corners cut off according as the ſwelling happens to be more or leſs on the upper part of the yard, with one ſingle piece of ſtrong tape fixed to it, which coming through between his hips, is to be brought over the croup, and tied on the other two; and when this accident happens to a ſtone-horſe, his teſticles ought to be ſuſpended in a bag of ſoft flaxen

cloth, which may eaſily be fixed to the other; by theſe means the return of the blood will be rendered very eaſy, and the ſwelling will ſubſide, which for want of ſuch a method, has ſometimes been the cauſe of horſes dying ſuddenly.

But ſince we have aſcribed the cauſe of coſtiveneſs and dry gripes to viſcid ſlimy matter engendered in the firſt paſſages, it will be very neceſſary, after the preceding means have been complied with, and the moſt urgent ſymptoms are removed, to adminiſter ſuch things as are neceſſary to deſtroy the remains of thoſe viſcidities; for which purpoſe, the following powder, to the quantity of a ſpoonful, may be given every morning;

Take galangal, zedoary, and calamus aromaticus, of each three ounces; the tops of dry wormwood, and the leſſer centaury, of each two ounces and a half; ginger, two ounces; black pepper and bay-berries, of each an ounce; make them into a fine powder, and keep it in a glaſs or gallipot cloſe covered for uſe.

This may be given in a decoction wherein a handful of rue has been boiled, letting him faſt two hours before and one after taking it; and if your horſe be of ſmall value, you may give him every day, among a few oats, an ounce of antimony, or two ounces of flour of brimſtone; or you may make it up into a paſte with a little flour

flour and butter, continuing its uſe for the ſpace of one week.

Champed rue and garlick is alſo very ſerviceable in this caſe; but all remedies will prove the more ſucceſsful, if you give your horſe exerciſe; and indeed, that alone oftentimes proves ſufficient; for by exerciſe the whole body is ſhook, and the lentor in the bowels, and the excrements, readily fall downwards, to their expulſion out of the body. We ſhall now put a period to this ſubject, with an account of two horſes that were ſeized with violent coſtiveneſs, and where the iſſue proved very different.

The one belonged to a gentleman, who, while travelling, was ſtopped upon the road the ſecond day of his journey; his horſe was in great pain, ſhrunk up his belly, often endeavouring to dung, and as often to ſtale, but could do neither; we were informed he had been taken up from graſs a week before he ſet out, and was obſerved to be very coſtive all that while; but becauſe he was to have ſome fatigue, they thought it unneceſſary to tamper with him, which no doubt was very reaſonable, had he not been more than ordinary coſtive. The firſt thing done to him was raking, and afterwards he had a pipe of tobacco given him at his fundament; the ſmoke of the tobacco proved a gentle ſtimulus, and made him oftentimes eſſay to dung, but without effect; ſo that at laſt, being in exceſſive pain, hanging his head, and turning it frequently towards

wards his belly, the owner thought fit to ſend for a farrier, who at firſt ſight ſaid he would die; however, he went and prepared him a comfortable drink, as he termed it, which by the ſmell, ſeemed to be ſome hot aromatic ſeeds boiled in ale.

After this he became much worſe, for there being no free vent upwards or downwards, and the wind being now more rarified by the hot ſpicey things, and conſequently taking up more ſpace in his bowels, he often lay down, and immediately ſtarted up again, ſhewing as much pain and agony as a horſe could poſſibly be in. We adviſed the gentleman to have him raked once more by a boy that had a ſmall hand and arm, who being ſatisfied with the reaſons we gave him, had it done accordingly, though it was not without ſome difficulty, for the horſe ſhrunk very much, and endeavoured conſtantly to lie down; but at laſt, when he had been thoroughly raked, he began to through out ſeveral hard balls of dung of his own accord; and at the ſame time ſtaled a little; whereupon we had the entrance into his fundament done with ſoap, which made him dung very plentifully, and he ſtaled ſo long that the ſtable was all afloat about him. After this a clyſter of broth, wherein beef had been boiled, was given him, with a handful of ſalt and half a pound of butter diſſolved in it, which brought away a great deal of dung, and abundance of ſlimy matter. He eat nothing that night, which was pretty

pretty late, but towards the morning he began to feed very plentifully, and was quite recovered of his indiſpoſition.

Had this diſorder continued upon him a little longer, without a vent to the hard excrements, which were ſo firmly impacted in the ſtreight gut, a violent inflammation of that gut and the neck of the bladder muſt have ſoon happened; which, without the utmoſt diligence, would have brought him ſuddenly to his end; for in that caſe it would have been very difficult to have fetched out the dung, which was the only means to preſerve him from thoſe accidents.

But this will be clearly illuſtrated in the other inſtance, which was of a dragoon's horſe, who after a full five weeks march, coming to ſtand at his eaſe, grew exceedingly coſtive, and his fundament and ſheath very much ſwelled.

He was committed to the care of one who was tolerably well ſkilled in many of the common things, but being wholly unacquainted with the ſtructure and machaniſm of that creature, who was the ſubject of his art, committed a grand miſtake in giving him a ſtrong doſe of purging phyſic; there being no vent for the paſſage of the excrements downwards, was put into the moſt violent agony imaginable, and at laſt died in ſtrong convulſions.

Perhaps this perſon might, by ſuch a method, have ſucceeded in caſes of leſs obſtinacy, and

where

where there was little or no ſwelling of the fundament; and if there had been a poſſibility of making the horſe vomit, he might have ſucceeded even in this, for then the phyſic would have gone off that way; and after ſeveral diſcharges by the mouth, the remainder might have gone downwards as it oftentimes happens to human bodies; becauſe the ſtraining to vomit makes a ſtrong compreſſion of the muſcles of the lower belly, which greatly forwards the dejections by the fundament; and therefore in ſome obſtinate caſes of this nature, the beſt phyſicians have ordered vomits with ſucceſs. But as it is quite different with horſes, and that their ſtomachs are not otherwiſe to be moved with the ſtrongeſt ſtimuli than to create ſickneſs that cauſes them to ſlaver a little, purging is not to be attempted in any ſtubborn coſtiveneſs, but by clyſters.

And if this method had been taken in the inſtance now before us, and due care obſerved to remove the ſwelling of his fundament by proper fomentations, as he was a young horſe, and not much impaired in his ſtrength, he might have eaſily overcome that diſorder.

*SECT.*

## SECT. XVIII.

### OF THE LAX OR SCOURING.

THAT the reader may be properly inſtructed in the cure of thoſe diſorders, we ſhall rank them under four different heads. We have already obſerved, that when the excrements have lain ſome time in the guts, the juices by their putrefaction become ſharp and corroſive, and by that means ſtimulate the inteſtines to ſhake off what is contained in them. But this does not always follow ſuch a ſtagnation of the excrements, as may be obſerved from what has been ſaid in the preceding Section. For ſometimes, before ſuch a diſcharge can happen, a horſe will be endangered of his life, and therefore we may reaſonably aſcribe this difference, ſometimes to the different conſtitutions of horſes, and ſometimes to the difference, of their food; there being ſome kinds more liable to corruption than others. But however, be that as it may, it is very certain that the lax and ſcouring in horſes are ſometimes the effect of a preceding coſtiveneſs, and therefore we ſhall account this, and all critical looſeneſſes which tend to the ſolution of any diſeaſe, to be of the firſt kind.

The ſecond kind of looſeneſs, is that which proceeds chiefly from want of digeſtion, for by that means a ſcouring may happen, without any previous ſymptom of coſtiveneſs, and when it is ſo, a horſe ſuddenly falls away and loſes his fleſh, and likewiſe his appetite; but this may be farther known by the diſcharge; for many things that he eats will come away whole, and his dung will be full of ſhreads of hay, and ſometimes accompanied with ſlimy matter.

Thirdly, A looſeneſs and ſcouring often happens when the pores of the ſkin, the urinary, or other diſcharges are obſtructed; for by that means, when the excrementitious parts of the blood have not a free vent through the common paſſages, they are derived in a more than ordinary quantity into the apertures of the guts, but particularly into the gall-pipe and pancreatic duct, ſo that they may be of different colours and conſiſtency, according to the predominency of the juices that flow into them. When moſt of it is derived from the inteſtinal glands, the matter will be clear and watery, or clear and glaſſy, not unlike that which Solleyſell obſerves in his third kind of cholic; but when it proceeds moſtly from the gall-pipe and pancreatic duct, it will be then tinctured with a yellowiſh colour, and if there happens to be a very great quantity of the gall diſcharged from the excrements, whatever is voided from the fundament, muſt of conſequence be

be of a deep reddiſh colour, and is the ſame as that which the above-mentioned author terms the red gripes; which conſtitutes his ſixth kind of cholic.

Laſtly, A lax or ſcouring ſometimes happens from viſcous ſlimy matter, hindering the chyle from entering into the lacteal or milky veſſels; and in this caſe, the excrements are uſually of a pale light complexion, as they conſiſt chiefly of chyle.

But all theſe are only different ſpecies of a diarrhœa; and when the ſcouring is large, as it happens to ſome full-bodied young horſes, a white greaſy matter, like fat, comes away in the dung; and this is what farriers term *molten greaſe*, which is of the ſame nature with the greaſy diarrhœa, which ſometimes happens to men of groſs habits as well as to horſes, and ſeems to be occaſioned when the glands of the inteſtines are more than ordinarily opened, whereby the matter is evacuated from the blood into the guts, which ſhould otherwiſe be depoſited among the fat.

It ought to be obſerved, that in all thoſe ſcourings that are of the firſt kind, and are only the critical diſcharge of ſome diſeaſe, there are ſeldom or never any bad accidents attending them, unleſs the diſeaſe has been of ſuch continuance as to waſte and attenuate the body; and therefore, when the ſickneſs abates by any ſuch diſcharge, the beſt way is not to be over haſty to ſtop it, but it ought rather to be encouraged when

it proves imperfect, and that muſt be done by medicines that are moderately purging; becauſe all diſcharges that proceed from the inteſtines may degenerate into an incurable diarrhœa. Care ought to be taken not to let it run on too long, or it may be too late for a certain cure, which we ſhall here deſcribe as well as for the other ſpecies of a diarrhœa, but ſhall now proceed to the next, where a horſe loſes his appetite, and when the want of digeſtion is manifeſt from an imperfect comminution of the dung, that is, when ſome part of the food comes away whole as it is eat.

In this caſe, all thoſe things that we have already mentioned for ſtrengthening the ſtomach are to be uſed, for which purpoſe we alſo recommend the uſe of diapente to thoſe that like it; but it is not one doſe that can be relied on, becauſe it ought to be repeated every day, and ſo muſt any other ſtomachic, before any extraordinary effect can be wrought.

And becauſe this diſeaſe is both in the ſtomach and bowels, the following clyſter may be given as ſoon as you perceive him begin to recover his appetite, unleſs the looſeneſs begins alſo to abate with the other ſymptoms, and in that caſe it may be let alone.

Take camomile flowers, wormwood, mint, and centaury, of each one handful; boil them in a gallon of water to three quarts, then ſtrain or

ſqueeze

ſqueeze the liquor through a cloth or ſieve; and add ſweet oil, one pint; common ſalt, two handfuls; and tincture thebaic, half an ounce; mix them together for two clyſters, to be given warm.

This may be repeated once or twice, but if the looſeneſs ſtill continues, and the horſe grows weak, it is a very bad ſign, eſpecially if he refuſes to feed.

The next kind is that where the excrements are tinged yellow, or of a deep reddiſh colour, proceeding, as we have obſerved, from a too great profuſion of the gall and pancreatic juice.

In this caſe a horſe may be firſt purged with either of the following remedies:

Take rhubarb in powder, one ounce; aloes, three drachms; extract of camomile flowers, and jalap, of each eight drachms; oil of aniſeed, one drachm; with a little wheat flour, and a ſufficient quantity of molaſſes, make it into a ball.

Or,

Take bitter purging ſalts, ten ounces; jalap, half an ounce; ſyrup of buckthorn, two ounces and a half; ginger, three ounces; mix them together in a quart of warm water for one doſe.

If the horſe be of ſmall value, you may give him two ounces of ſnake-root, half an ounce of diaphoretic antimony, made into a ball with any ſyrup;

ſyrup; for after purging has been once or twice repeated, thoſe medicines which promote ſweat, and other ſecretions, are to be uſed, as they make a revulſion, and conſequently leſſen the diſcharges by dung; wherefore we recommend diaſcordium, mithridate, or the ſoap-pill, which may be adminiſtered in the following manner;

Take of the ſoap pill, one ounce; prepared chalk, two ounces; winters-bark, one ounce; with any ſyrup make a ball, to be adminiſtered every evening.

Or,

Take pill-ſtyrax, bees-wax, and maſtic, of each an ounce; and oil of aniſeeds, enough to form a ball; to be given as above.

The following drench may alſo be made uſe of with good ſucceſs, to aſtringe and dry up the ſtomach, bowels, &c.

Take ſaſſafras chips, half a pound; oak-bark, in groſs powder, three ounces; winters-bark, one ounce; boil them in two quarts of water to one quart, then ſtrain it and adminiſter the liquor warm, and repeat it every morning and every evening.

This ſhould be continued two or three days ſucceſſively, and unleſs the ſcouring be very violent, it will certainly put a ſtop to it.

But

But the practitioner is to obſerve, that if a horſe has a fever upon him which does not diminiſh, but increaſes with the looſeneſs, thoſe medicines which act more immediately upon the bowels are then to be made uſe of, therefore the following clyſter may be injected, which will prove very efficacious in this caſe:

Take lime-water, three quarts; guaiacum ſhavings, one pound; boil them till one-half be evaporated; then ſtrain the liquor, and add two drachms of opium. This will be enough for three clyſters, which may be injected three times a day very warm.

Or,

Take oak-bark, in powder, four ounces; galls, one ounce; boil them in three quarts of water to one-half; then ſtrain it and adminiſter as above directed.

Theſe clyſters are always to be made in a leſſer quantity than thoſe that are purging, and the horſe's tail to be kept cloſe down, that he may retain them as long as poſſible, and as ſoon as he flings out the firſt, which perhaps may not be in the ſpace of four hours, it muſt be followed with another, and ſo on until the looſeneſs is quite ſtopped; which by the help of the clyſters, will ſoon be conquered, unleſs his ſtrength be quite waſted,

ed, and that he has loſt all ſenſation in his bowels.

We now come to the cure of the laſt ſort of ſcouring, which has been mentioned before, when the chyle is diſcharged with the excrements; and as this indiſpoſition proceeds from ſlimy matter obſtructing the paſſages into the lacteal veſſels, the moſt proper method to be taken at firſt is to purge the animal, for which purpoſe we recommend the following:

Take of bitter purging ſalts, eight ounces; ſal polychreſt, two ounces; diſſolve them in three quarts of very thin water-gruel; then add an ounce of rhubarb; give it the horſe at three different times, an hour between each quart.

Or,

Take ſalt of tartar, ſal polychreſt, and bitter purging ſalts, of each three ounces; rhubarb, one ounce; mix them in three quarts of barley-water to be given as the laſt.

Let ſal prunellæ be diſſolved in his common drink, becauſe all thoſe diluters are moſt proper to waſh off that viſcid matter which adheres ſo cloſely to the guts, and hinders the chyle from entering into its proper veſſels, eſpecially when they are uſed plentifully; but if this ſort of flux ſhould proceed from a ſtrumous obſtruction, as it ſometimes

times happens to human bodies, it would prove incurable.

As to that which farriers call *molten greaſe*, it being for the moſt part the concomitant of every large ſcouring, that ſymptom generally wears off in the proceſs of the diſtemper, and requires no particular management, diſtinct from what has been already preſcribed for the third ſort of looſeneſs, which are purging and aſtringent clyſters, with the aſſiſtance of thoſe things that are proper to promote perſpiration through the pores. In all violent diſorders of the inteſtines, there is generally a weakneſs in the ſtomach, therefore it can never be amiſs to exhibit ſuch things as are proper to procure a good digeſtion, at the ſame time that other means are uſed to carry off the more urgent ſymptoms, and theſe ought to be continued, eſpecially to a horſe of value; and indeed it is for want of ſuch helps that many horſes dwindle away or fall into other diſtempers, after the looſeneſs has in a great meaſure been overcome.

The food that is to be given in ſuch diſorders ſhould be the cleaneſt and beſt hay, bran moiſtened with red-port, and parched barley.

As all thoſe diſeaſes have their primary cauſe from colds, ill-uſage, or from foul corrupt feeding, and want of exerciſe, the owner ſhould keep an eye over his horſe and learn his conſtitution, by which he will know what he is able to bear, conſequently by ſuch care theſe accidents may in a great meaſure be prevented.

## SECT. XIX.

### OF A DYSENTERY, OR BLOODY FLUX.

THE cauſes of this diſeaſe is an acrid blood, eroſion of the inteſtines, abraſion of their mucus, long continuance of a diarrhœa, indegeſtion, &c. in fact, it is too often from an advanced degree of a diarrhœa, and particularly of that ſort which proceeds from a profuſion of the pancreatic and bilious juices; for when the diſcharge from thoſe parts is very much enlarged, it cauſes a ſtill greater influx of blood and humours towards them, which being more than can be converted into the proper juices, forces itſelf through the interſtices of the veſſels, and is diſcharged with theſe juices into the guts.

Sometimes it reſembles the waſhing of fleſh, ſometimes there is a mixture of purulent matter, or corruption, along with it, and ſometimes little or nothing comes away but pure blood, but this laſt kind proceeds from an aperture of the internal hæmorrhoidal veſſels.

But it is to be obſerved, a bloody flux very ſeldom happens to horſes, inſomuch that Solleyſell has given it no place among other diſeaſes of the like nature; and for our own part, we cannot ſay we have ever ſeen blood come from a horſe's fundament,

fundament, otherwiſe than by the preſſure of hard dung upon the great gut, which by that means has only ſqueezed out a very ſmall quantity from the veſſels thereof; yet becauſe that diſtemper may, without doubt, ſeize ſome horſes, as it is not inconſiſtent with the œconomy of that animal, and as ſome authors have mentioned it in all its different appearances, we ſhall therefore give ſuch directions as are neceſſary for the cure. It is proper, in the firſt place, to make a revulſion by taking a moderate quantity of blood from the neck-vein. This is convenient in all fluxes of blood from the inferior parts, unleſs the horſe be exceedingly weak.

If there be a mixture of purulent, corrupt matter after bleeding, moderate purging will be very proper, with ſuch things as have been preſcribed in the preceding ſection; all the other medicines, recommended to make a revulſion by ſweat and inſenſible tranſpiration, are alſo to be complied with, as alſo the aſtringent clyſters there recommended, which in moſt caſes will anſwer the end; we ſhall therefore only add one more.

Take a quart of forge-water, and boil in it four ounces of oak-bark, two ounces of tormentil-roots; balauſtines and red roſe-leaves, of each a handful. To the ſtrained decoction add three ounces of diaſcordium, one ounce of

mithridate, and half a drachm of opium. Let this be injected warm, and repeated as often as there is occaſion; if you are provided with a ſyringe that has a pretty large pipe, you may ſometimes add two ounces of French bole, in powder, or ſealed earth.

But above all things you are to avoid mixing oil or butter, or any other greaſy matter with clyſters that are of this intention, as is common among farriers; for theſe things are directly contrary to the nature of thoſe applications, and will not only render their operation ineffectual, but increaſe the diſeaſe, and inſtead of aſtringing and fortifying the bowels, will weaken them by cauſing a greater relaxation of their fibres.

## *SECT. XX.*

### OF WORMS, BOTS, AND TRUNCHEONS.

THERE are ſeveral kinds of vermin bred in the bodies of horſes, which go under the denomination of bots, and worms, and truncheons. The worms are of divers colours and ſhapes; ſome reſemble earth-worms, others are ſmall and white, ſharp at both ends like needles. The truncheon is thick and ſhort, and the bot is not unlike a ſmall caterpillar, the laſt are commonly found

found in the ſtreight gut, eſpecially of ſome horſes when they are firſt taken from graſs.

We have taken notice of another kind, which reſemble wood-lice, only that they have fewer feet, are of a deep reddiſh colour, velveted on the back, like a bot, and made up of ſeveral folds. Theſe, as ſome authors will have it, are bred in the ſtomach, and abide in it, and devour all the nouriſhment, ſo that a horſe, if he be never ſo great a feeder, cannot thrive while they are in his maw; and they farther ſay, that thoſe kinds of worms are oftentimes the occaſion of a horſe's death, by eating holes in the ſtomach. But it is very certain, as ſoon as an animal dies, thoſe parts that turn firſt to putrefaction, as the aliment in the ſtomach, which is kept under cloſe cover, muſt and will ſoon breed vermin, and that of different kinds, then, and then only are living worms in the dead horſe's ſtomach. It is reaſonable enough to believe, that the ſeeds of divers inſects may be depoſited among the food of moſt animals, and be thus conveyed into the ſtomach, and may be brought to life very ſuddenly after the animal is dead; but that worms, or any other kind of vermin, can either be bred or ſubſiſted in the ſtomach of any living creature, is as impoſſible as a mouſe to live under the farrier's anvil while he is at work upon it; for it is very well known, that the muſcular action of

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the ſtomach, by which it is kept in conſtant motion, would much ſooner deſtroy any ſuch creatures, if it was poſſible for them to breed there, than the common food which they eat, that being harder and much more difficult to be broken than the vermin.

And therefore, Markham's and other authors' aſſertions muſt be as falſe as ridiculous, and only taken upon truſt from the ſpeech of ſome mountebank, where ſpeaking of the red worms, he ſays, "He has ſeen horſes, whoſe ſtomachs have been eaten quite through with them, ſo that the meat which they eat could not be held in their ſtomachs, but fell, upon the ſwallowing of it, into the body, making the belly ſwell like a tun; and that they died in violent agonies." Neither will the hiſtories we have of worms being voided at the mouths of men, women, and children, however authentic, avail any thing to prove their ſubſiſting in the ſtomach, ſince it is very certain they have been thrown upwards like the gall or excrements in the iliac paſſion, when the periſtaltic motion of the inteſtines has been very much inverted, and theſe have been but a very ſhort while in the ſtomach before their ejectment.

We may therefore very reaſonably affirm, ſince the modern diſcoveries have ſhewn us the true uſe of the ſtomach, that this ſort of vermin can only

only be bred and ſubſiſted in the guts of any live animal, and not in the ſtomach; and when they are found in the ſtomach at any time, it is either after the animal is dead, or elſe they are brought into it in the manner we have already mentioned.

The cauſe of worms is from foul feeding, and very often a bad digeſtion, for that will have the ſame effect as corrupt and unwholeſome food. For the aliment, when it is not ſufficiently broke and comminuted in the ſtomach, turns to crudities, and is rendered the more liable to putrify in the guts; ſo that a proper matter is furniſhed for the production of vermin; and therefore, we may often obſerve, that as in children, even ſo young horſes are more liable to be infeſted with worms, than thoſe that are grown to maturity; and this may probably proceed from the weakneſs and flexibility of the ſolid parts, whereby, though their appetites are at that time ſenſible and vigorous, yet the ſtomach muſt act leſs forcibly upon the aliment, than when they are arrived to a more advanced ſtate, ſo that of conſequence they may be rendered more liable to the production of thoſe animals.

The ſigns are ſuch as appear in a cholic, for beſides that, thoſe inſects occaſion a titillation in the inteſtines, the viſcid groſs and putrified matter whereby they are engendered, cauſe a vellication

cation and frequent twitches, and withal ſo much pain, that a horſe appears to be in all the agony imaginable, lying down and ſtarting up, again by fits, oftentimes ſtriking the belly with his hind foot, and oftentimes rubbing his fundament againſt any wall or poſt that happens to be near him; and when there are great quantities of theſe vermin, eſpecially when they are harboured in the great gut, they then come away, and appear plentifully in the dung.

The cure conſiſts of all thoſe things that are proper to deſtroy the viſcidities in the bowels, and at the ſame time to ſtrengthen the ſtomach; for by that means a horſe digeſts his hay and corn, and nothing but the groſſer parts go downwards into the guts, ſo that then it is impoſſible for thoſe vermin to be eaſily engendered there. And becauſe purging is of the moſt immediate efficacy in all ſuch caſes, it is therefore proper to begin the cure that way, and for that purpoſe, if there be no obſtructions in the ſtreight gut, which may firſt require the uſe of clyſters, we recommend the following:

Take jalap in powder, and ſena, of each one ounce; boil them in a quart of water, to which add buckthorn ſyrup, four ounces.

Or,

Take rue two handfuls, boil it in two quarts of water to one quart, then ſtrain it, and add ſal diuretic,

diuretic and ſal polychreſt, of each an ounce. Let your horſe be kept from feeding two hours before and two hours after, giving him moderate exerciſe to help the operation of the phyſic, and at night he may have ſcalded bran to eat.

But the following are the proper purges to deſtroy worms and wormy matter, that have mercurius dulcis, cinnabar of antimony, or æthiops-mineral, joined with them:

Take of Barbadoes aloes, in powder, ten drachms; cinnabar of antimony and mercurius dulcis, of each three drachms; diagridium, one drachm; oil of aniſeeds, two drachms; with flour and molaſſes form it into a paſte, divide it into two balls, and give the horſe one of them every other evening.

This being three or four times repeated, will deſtroy all manner of worms, and carry off that ſlimy matter in which they are engendered, and without the leaſt danger.

The mercurius dulcis may be had at any chymiſt's or apothecary's; as for the æthiops, it is made of equal parts of quickſilver and brimſtone, rubbing them in a mortar till they are incorporated and turned to a black powder; half an ounce made into a ball with flour and honey may be given at pleaſure, for a week together, one every day.

After your horſe has been ſufficiently purged with the remedies before mentioned, the following powder may be given for a week or a fortnight, and it will be of great ſervice to deſtroy all the remains of the diſtemper:

Take galangal, in powder, one pound; prepared tin, half a pound; aloes, four ounces; ſal polychreſt, ſix ounces; teſtaceous powders, compound, twenty ounces; mix them together in a fine powder, and keep it in a cloſe bottle for uſe. The doſe is three ounces mixed into a paſte with wheat flour and molaſſes, to be given every evening.

There are many other remedies appropriated to deſtroy worms, which are very good when rightly applied, as a quart of beef or pork-pickle, rue, St. John's wort, tops of broom, male fern, ſavin, citron-ſeeds, wormwood and wormſeed, garlic, onions, and ſuch like things; but none can come up to mercurius dulcis, and cinnabar of antimony, or the æthiops-mineral, for immediate efficacy.

Some of the farriers, for cheapneſs, make uſe of alum, black-ſope, burnt vitriol, and ſimilar articles; ſome exhibit corroſive ſublimate, or red precipitate, as much as will lay upon a ſilver penny; but as theſe laſt medicines, ſuch as the ſublimate or red precipitate, cannot be uſed internally without great danger, eſpecially to brute creatures, who

who can never be brought to take what may be proper to carry off their ill effects, they ought therefore not to be given in any caſe; for though they may, by their powerful efficacy, ſucceed in ſome circumſtances where a horſe happens to be robuſt and ſtrong, yet when it is otherwiſe, if they are not the occaſion of ſudden diſorders, they will lay the ſeeds of a bad conſtitution, and render a horſe unſerviceable for the future.

## SECT. XXI.

### OF CHOLICS, OR VIOLENT PAIN IN THE BOWELS,

WE have already taken notice that moſt of the diſeaſes of the guts will cauſe cholic-pains when they come to an extremity; but horſes, who are oftentimes under the direction of bad managers, and are themſelves only guided by inſtinct, muſt therefore be rendered liable to many inconveniences, and to none more than thoſe which ſhew themſelves immediately in the bowels; for the drinking cold water when a horſe is hot, or if at that time he be rode deep into the water, or if he be ſuffered to cool on a ſudden when he has been at hard exerciſe, any ſuch miſmanagement very frequently brings on the moſt intolerable diſorders, as we daily obſerve.

And this is eaſy to be accounted for, becauſe when the body is hot, and the pores open, any ſudden cold cauſes them to be immediately ſhut up, ſo that all the common and neceſſary diſcharges are in a great meaſure hindered, by which means the veſſels of the colon, and ſometimes of the ſtomach and other bowels, are cramped, or diſtended, and this is the true cauſe of the pain, and likewiſe of the wind and flatulency that is obſervable in ſuch caſes; for although wind may often proceed from other cauſes, as from the viſcidity and ſlimineſs of the matter that is ſometimes harboured in the bowels, yet in this caſe it is chiefly occaſioned by their over great relaxation, whereby they loſe their tone and periſtaltic motion, which is abſolutely neceſſary to the expulſion of the wind as well as the excrements.

As for the ſigns of theſe ſudden diſorders, they are ſufficiently known to every one; we ſhall therefore proceed to the cure.

Firſt of all, if the horſe be hot and feveriſh, as it ſometimes happens, a moderate quantity of blood may be taken from the neck-vein, after which a clyſter ought to be injected, and ſuch a one as will ſtimulate the guts and promote their periſtaltic motion; for by that means the excrements and wind will not only be ejected, but the ſtagnant blood muſt alſo be forwarded; for which

which purpoſe nothing can be more ſervicable than a quart of emetic wine, given luke-warm; but becauſe this is not to be had without expence, it would therefore be worth any gentleman's while to make it, and keep it by him, and that is eaſily done, only by infuſing four ounces of crocus metallorum, or liver of antimony, in a gallon of ale for ſeveral days, and it will give it an emetic quality. But for want of the emetic wine, the following clyſter may be uſed:

Take common ſalt, one pound; ſweet oil, half a pint; aloes, in powder, an ounce; buckthorn ſyrup, ſix ounces; mix it in a quart of thin gruel, and give it warm.

Or,

Warm a quart of pork or beef-pickle, and inject it; this will do for a ſhift, when nothing elſe is at hand.

Let either of theſe be given, taking care to keep the horſe moving until the operation is quite over, and this method will be the more neceſſary if the horſe has been full fed, and if it be otherwiſe, that he was empty when this accident happened to him, a clyſter of broth, or of the emollient herbs and brown ſugar, or molaſſes, will be ſufficient.

After the purging clyſter has finiſhed its operation, ſweat ought as ſoon as poſſible to be promoted, and that very plentifully.

Take

Take of the ſope-pill, half an ounce; camphor, two ſcruples; blend them together into a ball. This is to be given the laſt thing at night, and to be waſhed down with a quart of warm two-penny.

And to comfort his bowels, the clyſter preſcribed in the preceding Section, to eaſe violent pains in the guts, may be given; or the following which is of like efficacy, and will alſo help to promote the ſweat:

Take galangal, in powder, two ounces; boil it in three pints of water, to a pint and a half; then ſtrain and diſſolve in it venice-treacle, ſix ounces; to which add a pint of ſpirit of wine.

Let this be given milk-warm, keeping his tail cloſe to his fundament until he has no motions of throwing it out. But a horſe is ſometimes ſo reſtleſs with the violence of thoſe pains, that there is no keeping him on his legs, but he throws himſelf down every minute, and ſome horſes kill themſelves by ſtriking their heads againſt the walls, who otherwiſe might eaſily be recovered if they could be managed. Theſe ought to be buried in a dunghill all but the head, there being no caſe that requires that kind of immediate ſweating more than this, for it is very much to be ſuſpected that the giving of cold water to a horſe when

when he is hot, and washing him about his breast and belly, may often cause an immediate foundering in the chest, and this seems reasonable enough from the extraordinary working and heaving of the flanks, which is observable all on a sudden in some horses after such accidents.

## SECT. XXII.

### OF THE YELLOWS, OR JAUNDICE.

NO distemper happens more frequently to horses than the jaundice or yellows, and it proceeds from obstructions either in the gall-pipe, caused by slime or gritty matter, or when the roots of those little ducts that open into that pipe are stopped by the like matter, or compressed by a plenitude and fulness of the blood-vessels that lay near them.

Sometimes that distemper proceeds from or accompanies hard and schirrous obstructions in the liver, and sometimes the blood will be tinctured in malignant and pestilential sicknesses, and which will also happen from the bite of an adder, or other poison in the blood; the liver no doubt may be inflamed and swelled, and by that means bears its proportion from which the yellowness happens; but as this is only a symptom which

may

may be removed by all thoſe things that are proper to carry off the fever, and as we have already laid down ſuch methods as are proper in ſuch caſes, we ſhall only here conſider it as any other ſecretion that is obſtructed, and provide ſuch means as are proper to open the ſaid obſtructions.

When the gall-pipe, or rather when the roots of its common ducts, are any way retarded, the matter which ſhould be converted and turned into gall is taken up by the veins, and carried back again into the maſs of blood, giving it a yellow tincture, ſo that all the parts of a horſe that have a capacity of ſhewing the colour, as the eyes, the inſide of the lip, and even the ſlaver from the mouth will appear yellow; but as this diſeaſe is contrary to that ſort of ſcouring, where there is a profuſion of the gall, and there being little or none of it tranſmitted into the guts, the excrements will therefore look of a light pale green, as if the aliment was only waſhed in the guts.

It is alſo to be obſerved, when a horſe has the yellows, he turns dull, heavy, and ſluggiſh, low in his ſpirits, and faint, eſpecially when he is put to the leaſt exerciſe, and when the diſtemper has continued ſome time upon him, he loſes his appetite, and becomes poor, lean, and jaded.

While the obſtructions are only in the gall-paſſages, it is eaſy enough to be cured; but when the

the liver is indurated and hardened near thoſe paſſages, as it ſometimes falls out, or if there happen impoſtumations or ulcers, the cure will then be very doubtful; for in this laſt caſe, it will have all the ſame effects as any other internal waſting ulcer; and in the other caſe, where the liver is ſcirrhous and hard, theſe obſtructions muſt alſo be difficult, becauſe they lie out of the reach of manual operation, and alſo of external applications.

But in the cure we ſhall begin with its firſt ſtage, when we only ſuppoſe the gall-paſſages obſtructed as above-mentioned; and to remove the obſtruction, purging muſt in the firſt place be neceſſary, with remedies that are moderately opening, ſuch as cannot operate too draſtic; and unleſs there be pain and inflammation in the liver, bleeding will do but little ſervice, however much it is in vogue in ſuch caſes.

Therefore let the following infuſion be made:

Take turmeric in powder, and ſenna, of each two ounces; marſh-mallow roots, four ounces; ſalt of tartar, half an ounce; put them into two quarts of boiling water, with four ounces of white ſoap, letting it ſtand all night, and in the morning give it the horſe.

Or,

Inſtead of this, the horſe may be purged three or four times with ſix drachms of Barbadoes aloes,

an ounce of turmeric, and two ounces of Caſtile ſope, with a ſufficient quantity of molaſſes and wheat-flour, to make a ball.

After purging in the manner we have preſcribed, the horſe may have now and then a little ſcalded bran, and ſometimes boiled barley to eat, and his water may have conſtantly barley, turmeric, and liquorice, boiled in it, till he recovers; and a doſe of the following preſcription may be given to him for a fortnight or three weeks together, unleſs the purging alone removes the diſtemper, as it ſometimes happens in the beginning:

Take the whites of twenty-four eggs, and three ounces of turmeric in powder, beat them very well together in a pint of pepper-mint water; Caſtile ſope, an ounce and a half, diſſolved in a pint of warm water; when cold, mix them together, and give it the horſe every morning, for ten days.

We preſcribe the following remedy, which ſeldom or never fails to carry off the yellows before it be of long ſtanding:

Take Caſtile ſope two ounces, diſſolve it in a ſufficient quantity of hot water; then with an ounce and a half of turmeric, and as much honey, make it into a paſte, and form a ball.

This

This muſt be repeated every other day, for a week at leaſt; but in this caſe, the uſe of chewing-balls, or the champing of green juniper-wood, horſe-radiſh, or any ſuch thing that will be of efficacy to rouſe his ſpirits, muſt needs be of great ſervice to him; and he ought alſo to have every day exerciſe given him in proportion to his ſtrength and ability; for nothing can conduce more to aſſiſt the medicines in their operation.

But when the yellows proceed from ſtony and hard obſtructions in the liver, which, if they be liable to pain and inflammation, eſpecially upon the leaſt exerciſe, and you may obſerve him under great oppreſſion, and will often turn his head towards his right ſide; in that caſe he muſt be bled, and moderately purged with the infuſion above preſcribed, after which the following fomentation may be uſed:

Take camomile-flowers, wormwood, and oak-bark, in powder, of each one handful; boil them in a gallon and a half of water to one gallon; then ſtrain them, and add one quart of the ſtrongeſt ſpirit of wine.

The proper way to uſe this, is by dipping woollen-cloths into it, and applying it pretty warm and often to the parts affected.

If this ſymptom does not wear off in a little time, it will ſoon cauſe the horſe's death; but if

it is removed, and the horſe continues ſtill yellow, or if the diſtemper has continued obſtinate and immoveable notwithſtanding all proper means have been uſed, recourſe muſt then be had to medicines of the moſt powerful efficacy, for which purpoſe, we recommend the following purge:

Take aloes in powder, ten drachms; mercurius dulcis, three drachms; Caſtile ſope ſliced, two ounces, and with a ſufficient quantity of turmeric-powder and ſweet-oil, make them into a ball.

This may be given twice a week, according as you find he has ſtrength to bear them, until he has been ſcoured four or five times, after which, the cinnabar pills, or thoſe for the farcy, may be given, and their uſe continued for ſome conſiderable time (if your horſe be worth the expence) but eſpecially if you obſerve him rather to mend than grow worſe; and this method, when it is rightly followed, will be found to be the moſt rational to remove all obſtinate diſeaſes of the liver.

SECT.

## SECT. XXIII.

### OF THE DISEASES OF THE REINS OR KIDNEYS, &c.

WE find in the books of farriers, an account of all the diſeaſes of the reins and bladder, though there are but few who have delivered them in any regular order; and indeed ſome of them, as the ſtone in the bladder, &c. are but ſeldom met with; we ſhall therefore make it our buſineſs to ſpend as little of the reader's time as poſſible, in things that are uncommon and unprofitable; however, we make no doubt but ſome rare and unuſual inſtances of ſtones and ſlime may happen to thoſe creatures, yet the moſt common are only thoſe that proceed from coſtiveneſs, from an inflammation or ulceration in the kidneys, or ſome defect in the bladder, or in the urine itſelf; what relates to the pain or ſtoppage of water cauſed by coſtiveneſs, has already been diſcuſſed under that head, as it is not to be accounted a diſeaſe in thoſe parts, but only a ſymptom of another diſeaſe, and is removed as ſoon as that ceaſes; we ſhall therefore, in the enſuing ſec- only conſider a ſtoppage or a pain in making water, when the diſeaſe is confined to the reins and paſſages of the urine.

SECT.

## SECT. XXIV.

### OF THE STRANGUARY.

THOUGH this diſeaſe happens moſt frequently when there is an obſtruction of the dung hardened and indurated in the ſtreight-gut, as we have obſerved, yet, when it proceeds from another cauſe, it is moſt likely to be occaſioned either by an inflammation of the bladder, or ulcer in the kidneys; for when there happens to be an ulcer in thoſe parts, the ſharpneſs of the matter proceeding from thence, may no doubt cauſe pain when it paſſes into the urethra, by abrading and carrying off the mucus that ſhould defend that ſenſible part, ſo that a horſe in this caſe muſt ſtale in pain, and as this will alſo cauſe an inflammation there, inſtead of ſtaling freely, he will often dribble.

An inflammation in thoſe parts ariſing from any other cauſe, as hard riding, too long a detention of his urine has generally the ſame effect; but an inflammation of this kind happens the more readily, if there be a lentor of the dung.

To remove all ſuch diſorders, it will be neceſſary to give emollient ſoftening clyſters made of a decoction of mallows, marſh-mallows, mercury, camomile, and the like, with a mixture of oils and

and other ſlippery things, or clyſters made of fat broths; and to make them a little purgative, common treacle or manna may be diſſolved in them, to the quantity of ſix ounces or half a pound.

Half an ounce of ſal prunellæ or purified nitre, may be diſſolved in his water for two or three days together, or two ounces of crude tartar may be boiled in it. But if after hard riding you have reaſon to ſuſpect an inflammation in the kidneys, the bladder, or urinary paſſages, which muſt at the ſame time be accompanied with feveriſh ſymptoms, it will then be very proper to take blood from the neck-vein, and the uſe of the clyſters may be repeated as often as you ſhall ſee occaſion; and if you have reaſon to fear an ulcer in the kidneys, in that caſe all cleanſing balſamic medicines are to be complied with, for which purpoſe we chiefly recommend the following balls:

Take Caſtile ſope one pound, cut up thin, and diſſolved in a ſmall quantity of hot water; to which add ſal polychreſt, half a pound, in fine powder; ſeeds of fenugreek and linſeed, of each ſix ounces; ſalt of tartar, three ounces; crude opium, one ounce and a half; beat them into a maſs with a ſufficient quantity of ſpirit of turpentine. Two ounces of this may be made into a ball and given to the horſe early every morning.

SECT.

## SECT. XXV.

### OF AN IMMODERATE DISCHARGE OF URINE, AND STALING OF BLOOD.

A Copious flux of urine happens when the ſerum of the blood is too much attenuated and thin, or when the pores of the ſkin are conſtringed and ſhut up, or when the renal ducts (viz. the ſmall canals that open into the hollow part or baſon of the kidneys) are over extended and dilated, whereby the ſerum is ſeparated in too great a quantity from the kidneys.

The firſt is when the ſerous parts of the blood are exceedingly attenuated, and the general cauſe is by travelling in hot weather, or eating hot or ſpirituous herbs in the beginning of the graſs ſeaſon; and we have already obſerved, that the pores of the ſkin are moſt ordinarily obſtructed and ſhut up by the night fogs, or expoſing a horſe to the cold when he has been over heated; and the renal ducts may be dilated and extended by eating ſnow with the graſs in winter, which is ſaid to abound greatly with nitre, or it may be cauſed by drinking too much water of any kind, eſpecially when a horſe is put to hard exerciſe, for by that means it ſuddenly precipitates and falls downwards in a too great quantity into the reins,

reins, ſo that the above-mentioned ducts become widened beyond their uſual dimenſions.

After this it will not be difficult to underſtand how a horſe comes to ſtale blood, for though blood may ſometimes proceed from an ulceration of the kidneys, when they are worn and abraded by ſand or gritty matter, or by the acrimony and ſharpneſs of the corruption that proceeds from the ulcer; yet the moſt uſual cauſe of ſtaling blood happens when the renal ducts have been over diſtended by any of the cauſes before-mentioned; and blood for the moſt part follows a too great profuſion of urine, though this is very ſeldom attended to by farriers.

As to the cure, whether there be only a great profuſion of urine, or a flux of the blood, it is to be performed chiefly by medicines that ſtrengthen and agglutinate, and likewiſe by ſuch things as will divert the humours another way, by opening the pores; only, in caſe of blood, a vein ſhould by all means be opened in the neck or breaſt, to make as ſpeedy a revulſion as poſſible; becauſe this kind of hæmorrhage proves ſometimes fatal to horſes, and that very ſuddenly.

After bleeding, a cooling purge, wherein ſal polychreſt or ſal prunellæ has been diſſolved, will be very convenient, as the following:

Take ſal prunellæ and ſal polychreſt, of each one ounce; veleres, in powder, two ounces; bar-

ley-water, one quart; honey, half a pound; made warm, and given early in the morning for two or three days.

Or,

Take rhubarb and jalap, in powder, of each half an ounce; ſalt of nitre, one ounce; with a ſufficient quantity of honey and flour, make them into a ball, to be given as above; be careful that the horſes have warm maſhes of bran and water during the operation of the phyſic.

But if the flux of blood be violent, take two ounces of ſalt or ſugar of lead, and diſſolve it in a quart of vinegar or verjuice; and apply it cold to his breaſt and it will ſtop it immediately, unleſs it proceeds from ſome pretty large branch of an artery, and in that caſe, unleſs the rupture be in the urinary paſſage, where it may be reached by a ſtyptic injection, it will readily prove mortal.

If your horſe has got a fever, his feeding muſt be very moderate; if he has no other accident beſides a flux of urine, he may be indulged to feed ſomewhat more liberally, and among his oats may be ſtrewed the ſeeds of melons, gourds, or white-poppies; three or four of the heads of the ſaid poppies with the ſeeds may be cut to pieces and boiled in his water, which will give it no diſagreeable taſte. You may alſo give him now and then half a pint of ſweet-oil, for all thoſe things are very

very proper, and they will help to blunt the asperity and sharpness of the urine; but care must be taken not to let him drink too much water, but rather give it him the oftener, unless it be softened in the manner we have directed.

## SECT. XXVI.

### OF THE COLT-EVIL, SHEDDING OF THE SEED, AND MATTERING OF THE YARD.

THE disorder called the *colt-evil* is a continued stiffness in a horse's yard, and is so called because it is a disease incident to colts, and is brought upon them by having their full liberty with mares while they are not able to cover them; but the disease which generally goes under that denomination in this kingdom, is no other than a swelling of the sheath.

It may be easily cured in the beginning, only by bathing the sheath with some warm fomentation, made of emollient herbs, &c. as mallows, marsh-mallows, wormwood, camomile, oak-bark, and the like, with a mixture of spirit of wine; but if you find the swelling pretty hard, and that there are the signs of heat and inflammation, he

ought to be both bled and purged, and his yard tied up to his belly, making a hole in the bandage for the paſſage of the water.

The ſhedding of the ſeed, if a horſe happens to have any ſuch diſeaſe, may be eaſily known by a weakneſs and debility; but that which farriers bring under this denomination, is only ſome weakneſs of the reins, occaſioned by a ſtrain, or violent exerciſe, or the ſolution of a cold, which is ſometimes followed by a running at the yard.

But the cure is the ſame, whether it be ſeed or only matter from the reins, and may be performed by only once or twice purging, and the uſe of turpentine balls, as the following:

Take Venice turpentine, half a pound; boil it in water till it is quite of a hard conſiſtence. The doſe is the ſize of a large walnut, dipped in ſweet-oil, every morning and evening.

The mattering of the yard proceeds ſometimes from the ſharp froſty air cauſing an ulceration, but chiefly when a horſe has hurt himſelf by being too eager in covering a mare, for as the yard is of a looſe and ſpongy ſubſtance, if it therefore happens to be bruiſed, it eaſily becomes ſore and ulcerated, and when the ſkin is only fretted off from any part of it, from thence iſſues a conſiderable diſcharge

diſcharge of fœtid ſtinking matter, and may be of ill conſequence if due care be not taken, though at firſt it may be cured by bleeding only, and bathing the part with warm ſpirit of wine; but the beſt way of uſing the ſpirit is to take him out of the ſtable, for when theſe are applied to ſo ſenſible a part as the yard, the ſmarting pain will be apt to make him lame himſelf unleſs he has room; but that does not laſt above one minute.

If the ulcer or excoriation be inwards, which can only be diſtinguiſhed by the matter proceeding from the urinary paſſage, and not from the pain in ſtaling, as the farriers ſuppoſe; for the leaſt ſore outwards, as it is more or leſs accompanied with inflammation, will exhibit the ſame ſigns, as the urine paſſes through the inflamed parts; in that caſe, the following mixture may be injected three or four times a day, and it will ſoon cure him of that ſymptom.

Take the yelk of an egg and two ounces of Venice turpentine, beat them up in a mortar till well incorporated, then add a pint of roſe-water, and mix them together, after which add four ounces of camphorated ſpirit of wine.

Put the whole mixture into a phial, ſhaking it as often as you have occaſion to uſe it.

*SECT.*

## SECT. XXVII.

### OF THE DROPSY.

ALL our Engliſh authors, and ſome Italians, have enumerated a dropſy among the diſeaſes of horſes, and ſome affirm poſitively that they have cured it in all its different kinds; but that which chiefly happens to horſes is what the farriers call the *univerſal dropſy*, and ſhews itſelf more or leſs in all the external parts of the body, but eſpecially the legs and thighs, and they are the moſt dependent; and we have obſerved, in caſes of the greaſe, when that happens both before and behind, it generally proceeds from a dropſical diſpoſition.

The cauſe is from all kinds of ill-uſage, but eſpecially from bleeding and purging horſes beyond their ſtrength; for theſe unſeaſonable evacuations render the blood languid and ſlow in its motion, and for want of ſpirits it has not force enough to reach the paſſages of the ſkin ſo as to make the uſual diſcharge, but its ſerous parts burſt through the ſmall veſſels, and are depoſited under the ſkin or the fleſhy pannicle.

The ſigns are a laſſitude and wearineſs, faintneſs and difficulty of breathing, loſs of appetite, and a change of a horſe's natural colour, as from bay to dun,

dun, or from black to a duſkiſhneſs, and from white to an aſhy complexion, and the like; his hair will ſhed with the leaſt rubbing, and the pits of your fingers will remain wherever there is a ſwelling.

It is likewiſe to be obſerved, when a dropſical horſe lies down, he does not gather his limbs round together as a horſe that is free from that indiſpoſition, but becauſe of their ſtiffneſs ſpreads them out at their full length.

Although purging to exceſs is ſometimes the cauſe of this diſtemper, by reaſon it diveſts the blood of its ſpirituous and balſamic parts, yet, to attenuate the viſcidities of its ſerum, and to make a diſcharge of what is ſuperfluous, purging muſt again be made uſe of, and when that is performed with proper medicines, it is of no ſmall moment in the cure; but theſe muſt be ſuch as, beſides their purging quality, are prepared ſo as to communicate warmth and vigour to the blood, &c. for which purpoſe the following is chiefly to be preferred:

Take of rhubarb, in powder, one ounce; gamboge and precipitated ſulphur of antimony, of each two drachms; turbeth mineral, one drachm; gum guaiacum, half an ounce; with wheat flour and molaſſes make them into a ball.

They

They muſt be repeated every other day, for a fortnight or longer, and on thoſe days he does not purge, an ounce or ſix drachms of antimony may be given him; and becauſe ſweating is alſo of the greateſt ſervice when it can be promoted, the following ball may be given and repeated as often as there is occaſion:

Take ſope-pill, half an ounce; camphor and ſalt of hartshorn, of each half a drachm; make them into a ball for one doſe, and waſh it down with a quart of warm ale.

But if this proves inſufficient to raiſe a ſweat, he may be covered in a dunghill.

Some particular regard is alſo to be had to a horſe's diet in this caſe; it would be inconvenient to feed him high; yet while he undergoes ſo much cleanſing by purging, ſweat, and other evacuations, his aliment ſhould be ſomewhat proportioned to it, and therefore he ſhould be allowed a quartern of clean oats every day, after the operation of his phyſic, with an ounce of the ſeeds of dwarf elder, and two ounces of caraway-ſeeds ſtrewed among them.

SECT.

## SECT. XXVIII.

### OF A HORSE THAT IS HIDE-BOUND.

WHEN a horſe, after hard exerciſe or from an accident in being chilled, grows ſo lean, and his fleſh ſo much ſunk that his ſkin adheres cloſe to his bones, he is then ſaid to be hide-bound; but this is not properly to be termed a diſeaſe, when it may be made up by feeding; but when a horſe after good keeping continues in the ſame condition, we may then very reaſonably ſuppoſe him to lie under ſome inward indiſpoſition, and in this reſpect it may proceed from divers cauſes, as when the excrements by dung and urine are over much increaſed, and the pores of the ſkin obſtructed, or when the entrance into the lacteal or milky veſſels are ſtuffed by adheſive gluey matter, or from any other augmented ſecretion, or any large diſcharge, whereby ſuch a derivation is made as hinders the blood from reaching the extreme and outward parts; for by that means the veſſels and muſcular fibres become contracted and ſhrunk to the bones for want of their due nouriſhment, and as the juices in thoſe parts become alſo viſcid, the ſkin is thereby as it were glued to the ſubjacent fleſh.

And therefore, to form a right judgement of this diſtemper, the farrier ought to examine carefully both into the quantity and quality of what a horſe voids from him; for we have known a hide-bound horſe dung often, and his excrements ſoft like that of a cow, and yet not come directly to a lax or looſeneſs; and we knew another very coſtive, but when he had a beginning glanders, which was the cauſe of his diſtemper, though in the proceſs of the diſeaſe, that the matter came more plentifully, his ſkin grew very looſe and thin, which is eaſy to be accounted for; and a horſe may no doubt alſo become hide-bound from the other cauſes above-mentioned; and ſince this is properly an effect of ſome other diſeaſe, therefore whatever cures that, when it is once found out, will ſoon looſen a horſe's hide; as for inſtance, when a horſe voids too much dung, a ſtop is put thereunto with proper remedies, which aſtringe and dry up the belly; or when a horſe ſtales too much, or if the paſſages of the chyle are obſtructed, whatever carries off theſe obſtructions, or puts a ſtop to the ſuperfluous evacuation, will cauſe the blood to flow in greater quantity into the proper veſſels, by which means the ſhrunk and depreſſed fibres will by degrees be extended to their uſual dimenſions; but if the farrier be at a loſs to judge rightly in thoſe caſes, he can hardly do amiſs if he adminiſters the ſame remedies we have laid down for the cure of the yellows, for there are but

but few hide-bound horſes which they will not recover, unleſs there be an inward decay and waſte.

But while proper means are uſed inwardly, beſides good dreſſing, fomentations may be uſed outwardly, ſuch as are made of ſuccory, harts-tongue, agrimony, St. John's wort, bay-leaves, balm, mint, penny-royal, rue, ſage, roſemary, thyme, the roots of graſs-madder, eringo, or ſuch of them as can eaſily be had; let twelve handfuls be boiled in two gallons of water, or lees of wine, and taking as many of the ingredients in your hand as you can graſp, rub all the body with it as hot as you are able to bear; after which take ointment of marſh-mallows, and oil of rue, of each equal parts; with theſe chafe his belly, and all about his throat and jaws, or wherever the hide is much ſhrunk, then cover him with an old ſheet dipped in the liquor, being firſt wrung out, binding over all a warm quilt or rug.

This may be repeated for the ſpace of three or four days, and it will help to draw the ſpirits and nouriſhment to the dry ſkin, though it will do but little ſervice, unleſs the inward obſtructions be alſo removed.

But as for a tired lean horſe, who has no inward indiſpoſition, we would never adviſe any one to tamper with him, otherwiſe than by obſerving a due care in his feeding, dreſſing, and exerciſe; for in this caſe, while we only ſuppoſe a horſe's

body ſhrunk and depreſſed by the continual diſcharges from the pores of the ſkin, and the other excretions during his daily and continued labour, and the want of ſufficient food to make up thoſe loſſes, it is very certain theſe may be repaired by food and eaſe; but as in this caſe the veſſels are contracted and leſſened in their ſize and capacity, his food ought at firſt to be but moderate, otherwiſe a larger quantity of blood will be tranſmitted into theſe veſſels than they are capable at once to receive, which muſt needs be the occaſion of many diſorders, and will cauſe an over plenitude in the extreme parts, and ſo by its redundancy overburthen and load the principal bowels.

And this is truly the reaſon why lean and tired horſes, who have been ſuddenly fattened by jockeys, become ſuch jades, turn broken-winded or lame, or loſe their eye-ſight upon the leaſt ſervice; while the main ſtudy of thoſe perſons is (as every one ſufficiently knows) only to make them look fat and plump, they ſoften all their food, that it may digeſt ſoon, and turn the ſooner to blood, and allow them no manner of exerciſe, being ſenſible that any ſuch method would ſoon turn to their own detriment.

But to apply this more particularly to our preſent purpoſe, a lean horſe ſhould have his exerciſe and food increaſed by degrees, and juſtly proportioned to the augmentation of his ſtrength; and becauſe of the contraction and want of capacity

city which we have obſerved to be in the blood-veſſels of ſuch horſes, his exerciſe ſhould always be given him ſo as he may reſt ſome time before he has his feeding of oats; becauſe exerciſe, by thinning the blood, and making it take up more ſpace in the canals, may therefore, beſides other injuries to which it expoſes a lean hide-bound horſe, cauſe more than ordinary ſenſe of fulneſs, by diſtending the blood-veſſels of the ſtomach, which are in that part very ſmall, and therefore hurt digeſtion; whereas, if he be ſuffered to ſtand ſome time before an empty rack, or only to eat a little freſh hay, until the additional motion of the blood be decreaſed, and the veſſels become ſubſided by a gradual running off of the blood, a horſe will then become lightſome, and able to digeſt his food, ſo as it may be converted to true and ſolid nouriſhment. And for the ſame reaſons, a horſe in this condition ought never to be taken out ſoon after feeding, but upon neceſſity, and then he ſhould only be walked gently, as every meal makes a freſh augmentation of the blood; and indeed at all times his exerciſe ſhould be gentle and eaſy, until his veſſels are rendered capacious, and ſtrong enough to bear the ſudden ſallies of the blood, and that the offices of ſecretion have alſo acquired a ſufficient aptitude to make their diſcharges as regular and as nearly proportionable as may be to the quantity of his food.

And

And this muſt certainly be the true reaſon of fattening and hardening a lean hide-bound horſe, or, in other words, of bringing a lean horſe into good caſe, and at the ſame time rendering him robuſt and ſtrong, and able to bear the hardeſt labour, eſpecially if good rubbing and dreſſing, to promote the diſcharges of the ſkin, be frequently made uſe of.

But notwithſtanding theſe rules are what we can warrant to be ſufficiently agreeable to the laws of mechaniſm in all bodies whatſoever, yet, becauſe the animal ſyſtem is ſo much complicated whereby one horſe alſo differs from another, every man's own diſcretion muſt therefore, in the main, guide him as to particulars. What we have here obſerved in general, has been chiefly calculated with an eye to thoſe horſes that are of a tender and delicate frame, and not to ſuch as are naturally hardy, though theſe may alſo in ſome circumſtances require ſuch care to be had of them.

## *SECT. XXIX.*

### OF THE FARCY, OR LEPROSY.

THERE is no diſtemper which has tried the ſkill and invention of farriers more than the farcy; the writers of the lower rank, as Markham

ham and De Grey, and thoſe who have borrowed all their knowledge from them, have no otherwiſe accounted for it, than that it proceeds from corrupt blood, and that it is the moſt loathſome of all diſtempers, brought upon a horſe by infection, or by eating unwholeſome food, or by lying in ſwine's litter, and from ſuch like cauſes; neither have thoſe of better account mended the matter very much, having only amuſed their readers with a falſe and unintelligible philoſophy.

The Sieur de Solleyſell defines it to be an ulcer cauſed by the corruption of the blood, and that by a certain poiſon which is more or leſs malignant, and conſequently makes the horſe's condition either hopeful or altogether deſperate; and after a ſhort theory built upon the writings of ſome phyſicians, but no way applicable to the farcy, he has theſe words:

"For a brief explanation of the nature of that poiſon, it will be ſufficient to tell you, that it is a venomous ſtream of certain corrupt ſpirits, which penetrate the parts of a horſe's body, as the light of the ſun paſſes through a glaſs; theſe ſpirits are a ſort of ferment, that breed corruption in whatever part they attack."

But this explanation is not only imperfect, but altogether unintelligible; his compariſon being no way agreeable to his own ideas and notions of that

that poiſon, nor indeed deducible from thoſe cauſes which he himſelf has enumerated as the chief occaſion of the farcy; for he obſerves that it is ſometimes communicated by contagion from an infected horſe, the eating too great a quantity of new oats, or new hay, violent exerciſe in hot weather, and even once hard riding; hurts and wounds made by foul inſtruments, ſuch as ſpurs, bits, &c. the too great abundance of blood, and prepoſterous and too haſty diligence in fattening tired, lean, and over-heated horſes; but it is very certain none of theſe cauſes will produce ſuch a poiſon as can penetrate the parts of a horſe's body in the manner he has deſcribed; and indeed thoſe poiſons that are of the moſt volatile and corroſive nature, though their effects are ſudden, yet their operations are perfectly mechanical, as may be ſeen by any one who is able to peruſe Dr. Mead's Eſſays on Poiſon, where all thoſe things are clearly and intelligibly explained.

We ſhall therefore endeavour to account for the farcy in a way that, we hope, will be thought more rational than what any of our authors have hitherto advanced; and whatever regard he had to the procatarctic or remote cauſes of that diſtemper, we may venture to affirm that its immediate cauſe is a languid and heavy motion of the blood, and other juices contained in the ſmall veſſels of the extreme and outward parts of a horſe's body,

and

and that it has its chief ſeat in the ſkin and fleſhy pannicle.

But before we proceed farther, we ſhall take notice that moſt authors have divided the farcy into divers kinds, viz. the wet, the dry, the inward, the flying farcy, the corded farcy, the farcy that puts forth red or yellowiſh fleſh, and that which is of a livid and black colour, reſembling a hen's fundament.

The wet and the dry only differ as there is more or leſs moiſture in the ulcers and parts where it is ſeated; the flying farcy, which makes its appearance ſometimes in one place and ſometimes in another; and the inward farcy, which is ſaid only to be felt in the breaſt, but does not elevate the ſkin, and is obſerved often to diſappear on a ſudden, and become the immediate cauſe of ſickneſs; though either of theſe may degenerate to a true farcy, yet while they are not fixed, but endued with properties altogether foreign to this terrible diſorder, they cannot rightly be brought under that denomination, but ought rather to be looked upon as reſembling thoſe eruptions on the human body which happen in violent colds, or malignant diſorders, and are curable as ſuch; all the other kinds are only different effects of that which makes its firſt appearance like a knotted cord, and it is this ſort alone which, properly ſpeaking, conſtitutes a true farcy. In what manner ſuch a diſorder can happen to a

horſe, and produce thoſe effects we daily obſerve from it, ſhall be explained in this Section.

We have already taken notice that the farcy has its chief ſeat in the ſkin, and thin muſcular panricle which lies under it, and is cauſed when the juices in thoſe parts become viſcid, and conſequently ſlow and languid in their motion. If it be conſidered that there are an infinite number of veſſels in thoſe parts that are ſmaller than hairs, and that thoſe veſſels, however ſmall, have a capacity, and contain a fluid within them, any one may eaſily imagine, that, in the beſt health a horſe can be in, that fluid can move but very ſlowly, but when it happens to be too thick or viſcid, it may then be eaſily reduced to a ſtate of ſtagnation; and when it is denied a free paſſage through thoſe ſmall canals, as it is conſtantly preſſed upon by the ſucceeding fluid, thoſe ſmall veſſels, where there is a ſtagnation, will be ſtretched beyond their uſual dimenſion, and that place will be elevated and raiſed into a tumour.

As ſoon as any part is thus elevated, and the fluid ſtopped, that it cannot move forwards becauſe of the obſtructions and the compreſſions there are on all ſides, the veſſels being thereby filled beyond their capacity, it burſts forth; and being now got without the laws of circulation, putrifies, and, acquiring a corroſive malignant quali-

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ty, it gnaws and feſters until it has formed a convenient lodgement for itſelf.

If the ſtagnation be ſudden and violent, and accompanied with great pain and heat, it will cauſe ſo great a derivation of blood towards the inflamed part, that the ſubjacent muſcles will alſo be affected, and by that means the part will be raiſed into a large boil and impoſtumation; but when the pain and heat are moderate, it will probably pierce no deeper than the pannicle. Becauſe the irritation made by thoſe knots, or little tumours, is not of violence to affect and attract the blood in the larger veſſels, yet as there is a near ſympathy, and ſtrict communication, at leaſt between all the adjacent parts of the pannicle, any the leaſt irritation will eaſily affect thoſe that are neareſt and the malady will be communicated by degrees from one part to another, until it ſpreads over the whole body; but becauſe of the cloſeneſs of the ſkin to the pannicle, and the communication there is between them, the hide muſt alſo be affected; yet that intimacy and cloſeneſs is the cauſe, in ſo gentle an inflammation, that theſe knots do not riſe equally in all parts, but chiefly follow the track of the veins; the humour therefore has a greater tendency towards the veins, as it finds a lodgement under them while they are full, and elevate the ſkin; and moreover, as the veins, being only filled with a liquid, are therefore ſoft and

yielding, and may be much eaſier preſſed upon than a ſuperior ſkin which is more hard and compact, and it is from hence a cord is always formed by the humours along the track of the vein, and as the ſwelling increaſes, it gathers ſtrength, and ſometimes ſurmounts the vein itſelf, ſo that the vein ſeems to lie under it.

We have ſhewn how the humours thus obſtructed turn to matter, but the matter of the farcy is generally ſmall in quantity, as the knots are formed in parts that are dry and aduſt, and where there is but little moiſture; and as the veſſels that nouriſh it are alſo but ſmall, for this cauſe, when the cure happens to be ill managed, the ulcers degenerate into a caries, and put forth a ſort of fleſh which is red, white, or yellowiſh, according to the predominancy of the humours, or grow hard and ſchirrous, and of a livid colour; and when the lips of the ulcers become inverted, which happens frequently from the acrimony and ſharpneſs of the matter, or the frequent application of hot or unctious things, they are then ſaid to reſemble a hen's fundament.

But all this is reconcileable to what we have laid down as the immediate cauſe of the farcy, it is owing to a lentor in the blood and juices, whereby they move heavily; but eſpecially in the extreme and outward parts, where the veſſels are the ſmalleſt; and it is very certain that any or moſt of thoſe cauſes, to which Solleyſell and the beſt farriers have aſcribed the farcy, will produce

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ſuch a lentor and flowneſs; or if there be a previous lentor in the blood, it muſt increaſe that lentor, either in whole or in part, by exciting pain; and this is plain from the inſtance of the diſorder being cauſed by a ruſty ſpur, which can act no otherwiſe as a poiſon, than that ſome of the harſh and pointed parts of the ruſt fret and irritate the tender wounded pannicle, and even then it muſt act mechanically, and in the way we have above deſcribed, by retarding the motion of the juices in thoſe parts; and if previous to ſuch a wound there be a very great viſcidity and thickneſs of the juices, the farcy may be cauſed by the wound of a ſpur, or any other inſtrument, though it be altogether free from ruſt.

If this diſeaſe be cauſed by infection from another horſe, it muſt act in the ſame manner, for then we muſt ſuppoſe that ſome effluvia or poiſonous ſtreams fly off from the diſeaſed horſe, which, by inſinuating themſelves into the pores of a ſound horſe, muſt occaſion a ſtagnation of the juices in thoſe outward parts; but theſe effluvia are not of ſo volatile a nature, as to have often ſuch effects; but when horſes ſtand together in a ſtable, it is rather to be attributed to their eating the ſame kind of food, and their being under the ſame direction and management. What kind of poiſon may be in ſwine's litter, or how far it may be noxious to horſes, is not worth while here to determine, ſince it is very ſeldom made

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uſe of to horſes; and if it was, it would rather produce the mange than farcy.

The eating corrupt and unwholeſome hay or oats may bring on this diſeaſe, as ſuch feeding cauſes crudities, which muſt render the blood viſcid; for when the blood has once acquired that quality, a ſtagnation may be induced in the extreme and outward parts, where the juices are naturally viſcid, and the veſſels very ſmall.

Too much feeding without ſuitable exerciſe, may alſo be the cauſe of a farcy, as it may induce a gradual plethora, or fulneſs of the veſſels; but if that be by a ſudden adſtriction of the pores, it will be more apt to cauſe a fever or ſurfeit, or a foundering in the body, which in many caſes is not to be diſtinguiſhed from a ſurfeit; and the ſame effects may alſo be produced from hard labour, and from many other errors in the uſing and management of horſes. We ſhall now take notice of the ſigns, but ſhall only diſtinguiſh between thoſe which are ſaid to be good, and thoſe which are of ill proguoſtication.

That ſort of farcy which is ſaid to be eaſily cured, takes its riſe upon the head and upper parts; the reaſon is, becauſe it can have no deep root; but if it once comes to affect the emunctories and kernels about the jaws, and towards the ears, it is then to be feared, and if neglected will be apt to breed the glanders. That kind of farcy which is ſuperficial, and where the hide is only

only affected, cannot be of dangerous conſequence, even though it be univerſal, and has over-ſpread the whole body; but when it has been originally ſeated in the pannicle, or if it be obſerved to grow deeper, and affect the pannicle, it may be then looked upon to be more difficult and obſtinate, though even then it will not be very hard to remove, unleſs it either affect the glandulous and kernelly parts, or that the knots break or degenerate into a caries or ſcirrhous. But the moſt ſuperficial and leaſt-rooted farcy, if it continues long without abatement, may inſenſibly and by degrees become of ill conſequence, as it diſturbs the offices of ſecretion; for while the humours have a continual tendency towards the knots and ſores, the pores of the ſkin become obſtructed, and for the want of a due and regular diſcharge there, the leaſt error in feeding and exerciſe will cauſe inward diſorders; wherefore we may often obſerve horſes that have the farcy turn alſo broken-winded and conſumptive, and ſometimes become liable to the yellows, and to many other infirmities, which either render them altogether incurable, or at leaſt make the cure very difficult.

When the farcy begins on the extreme and moſt dependent parts, or if in the proceſs of the diſeaſe the humours fall downwards upon the limbs, it is in this caſe very difficult to be removed, as it is generally attended with the greaſe; but

but reaſon will be ſhewn in the theory of that diſtemper, and a competent knowledge of the ſtructure and mechaniſm of a horſe will eaſily enable any one to diſtinguiſh in other circumſtances. We ſhall therefore now go upon a method to cure this diſeaſe.

The farrier ought, in the firſt place, to look unto the ſtate and condition of the horſe, for if he be fat and luſty when the diſtemper ſeizes him, in that caſe, his diet ſhould be ſomewhat abated; but if it be otherwiſe, that the horſe is lean and out of heart, and that he has not had ſufficient nouriſhment, or that his labour has been beyond his ſtrength and feeding, his diet ought to be ſomewhat augmented; for as too great a plenitude and fulneſs of the veſſels is oftentimes the occaſion of that lentor and ſlowneſs of the juices which brings on a farcy, the ſame effects are ſometimes produced by poorneſs, becauſe in that caſe, the blood being diveſted of its ſpirits, becomes languid and ſluggiſh, and conſequently is rendered more apt to obſtruction in the extreme parts where the veſſels are the ſmalleſt, as we have taken notice of in another place.

Therefore, it will appear alſo to be founded upon reaſon, what Solleyſell ſays he has experienced from frequent trial and obſervation, that purging is of no great ſervice, but oftentimes a great detriment to horſes in the farcy. This is ſo plain in caſe of a horſe that is low in fleſh, that

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it needs no manner of proof, and can only be admitted of in ſuch circumſtances as makes it unavoidable when there happens to be an extreme coſtiveneſs, and then laxative clyſters are the moſt eligible; but on the other hand, when a horſe is fat and full bodied, though purging muſt in that caſe do him leſs hurt, and may be complied with in moderation, yet it is no way ſuited to make a perfect cure of the diſeaſe, but has been the ruin of many horſes in the hands of ignorant ſmiths, who know no method of carrying off diſeaſes, but by repeated purgations. The diſcharges made that way being the moſt apparent to the outward ſenſes, and the moſt agreeable to thoſe who are able to frame no other ideas of a diſeaſed horſe, than by imagining his blood to be full of corruption, and that the midicines they uſe have ſome elective property to drain that off with the dung.

A more warrantable experience has ſufficiently taught us, that in all purgations the good muſt be drained away with the bad; they are therefore ſeldom profitable but rather hurtful in foulneſſes of the ſkin and outward parts; but thoſe things can only be ſucceſsful which work more immediately upon the blood and humours, by changing their contexture and rendering them thin enough for their excrementitious parts to go off by the neareſt and moſt proper outlets; and it is plainly evident, the medicines hitherto found the

moſt effectualfor the cure of the farcy, have been endued with ſuch properties:

That we may proceed methodically, if a horſe be plethoric and full bodied, ſuch a habit may doubtleſs be an incumbrance to nature; in which caſe, there will be pain and inflammation in the knots and tumours, and yet the matter may not rightly be diſpoſed to come to a laudable digeſtion when theſe ſymptoms are obſervable; the cure may be begun by taking a ſmall quantity of blood from the neck, but that ought not to be repeated, unleſs ſome urgent circumſtance ſhould require it.

After bleeding, moderate purging may be once or twice complied with, eſpecially with one or either of the following preſcriptions, which we have in a more particular manner ſuited to the nature of the farcy:

Take jalap and aloes in powder, of each half an ounce; ginger, two ounces; mercurius dulcis, three drachms; oil of caraways, two drachms; with a ſufficient quantity of molaſſes make it into a ball.

This is ſo mild, that it may be given almoſt to any horſe; the following is ſomewhat ſtronger:

Take gum guaiacum, myrrh, and aloes, in powder, of each one ounce; ſnake-root, half an ounce; ginger, one ounce and a half; oil of caraways, two

two drachms; with any ſyrup form it into a ball.

No purging medicine can be better ſuited to the nature of the farcy.

Either of theſe may be given according to the ſtrength and ability of the horſe, obſerving always that he drink nothing but warm water and oat-meal, until the phyſic is quite gone out of his body; if he be purged three times, there it ſhould be about five days between each doſe. After purging, if you find the knots and little tumours ripen, you need only give the horſe half an ounce of Venice treacle or mithridate, or an ounce of London treacle, twice a day, in a pint of ale or white-wine, and this may be repeated every day until the matter is all diſcharged; or if they terminate in dry horny excreſcences, like warts, which ſometimes happens, it may be repeated after the worſt ſymptoms are over (viz. the ſwelling and inflammation about the roots) every other day only; and when the ſkin becomes ſo well fortified, and the excreſcences ſo much diſengaged from it, that they begin to fall off in the dreſſing, or that you can bring them off with your nails, without hurting him, you may then leave off the uſe of medicines, and put a period to the cure by giving your horſe due exerciſe.

If the obſtructions be of long ſtanding, and there is a very ill diſpoſition in all the parts

where the diſtemper is ſeated, and that the ſores and ulcers begin to have a bad tendency, then recourſe muſt be had to thoſe medicines which are endued with the qualities above mentioned; and firſt of all, we ſhall begin with ſuch as are the moſt ſimple and eaſy to be had; and here it will be proper to obſerve, that antimony given to a horſe among his corn, will ſometimes cure the farcy, yet it will not always do to truſt to exerciſe and antimony for a cure of this diſeaſe (after phyſicking) becauſe ſometimes it has proved unſucceſsful; but that may not be the fault of the medicine, but the keeper, who ought, while the horſe is under a courſe of antimony, to give him daily but moderate exerciſe, and likewiſe moderate feeding.

Therefore, when you give your horſe antimony for the farcy, let the doſe be two ounces, which may be mingled with his oats, and about an hour after, let him be walked abroad for the ſpace of an hour, or an hour and a half, and be very well rubbed when he is brought into the ſtable; but the comb muſt be ſparingly uſed to a horſe that has the farcy upon him, becauſe of rankling the ſores; after his dreſſing, clothe him moderately warm.

If the antimony opens his belly, it will then loſe much of its virtue, and the horſe will become weak; in that caſe you may give it in balls, made of Venice treacle or London treacle, with a ſmall quantity

quantity of flour to bring the mixture into a fit conſiſtency; continue to give it in this manner till the looſeneſs abates.

If it be froſty weather, his water ſhould be ſometimes warmed and ſtrewed with oat-meal, or at leaſt it ought to be ſet ſometimes before the fire, becauſe exceſſive cold water will chill the body of a horſe which is kept in more than ordinary heat during the operation of the antimony; but antimony may be given more profitably in the following manner:

Take equal quantities of antimony and ſea-ſalt, place them in a crucible, and flux them one hour; let it cool, then break the crucible, and break the ſcoria; afterwards rub the regulus down with the ſame weight of quickſilver, till it is all in fine powder; to which add gum guaiacum, an equal quantity; mix them very well together for uſe.

Two ounces of this alterative powder, made up into a ball or paſte, with a ſufficient quantity of honey, and given every other day to your horſe, will ſoon cure him of the moſt inveterate farcy, unleſs any uncommon accident ſhould happen, or that the horſe be broken-winded, or labours under ſome other inward imperfection.

The following drink by all means ſhould be given in this diſeaſe, and no doubt with very good ſucceſs;

ſucceſs ; but then it is not once or twice will do the buſineſs, but it muſt be continued a conſiderable time:

Take mezereon-root, cut into thin ſlices, one pound ; guaiacum and ſaſſafras-chips, of each three pounds ; boil them in ſix gallons of water to four gallons ; towards the end of boiling, add a pound of liquorice-root ſliced, then ſtrain it for uſe.

After each ball, give your horſe two quarts of this liquor every morning, and the ſame quantity towards evening, or oftener, warm.

We have ſeen a great many preſcriptions, which have been ſomewhat of the ſame nature, for the cure of the farcy ; but the owners of them, for the moſt part, boiled their ingredients in ale or beer, and gave it once or twice only ; and if the drink did not anſwer the end, they were then greatly diſappointed; but as all thoſe things have their operation chiefly in the glands and ſmall veſſels, a conſiderable time muſt be allowed before their efficacy can be much felt ; and if they anſwer the end in two or three months, it is as much as can be expected from them.

Solleyſell recommends the uſe of guaiacum, ſaſſafras, and ſarſaparilla, two ounces of each, made into a groſs powder, for three doſes ; which (he ſays)

ſays) is a ſpecific, and by a continued uſe, infallibly cures the farcy.

The roots of Solomon's-ſeal, white-mullein, and queen of the meadow, ſtand alſo recommended by him for the ſame purpoſe; but any or all of them muſt come far ſhort of our preſcriptions.

There are infinite remedies to be met with in the books of farriers, many of which are affirmed to cure the farcy infallibly, but as there are but few of them which are not overloaded with a number of uſeleſs ingredients, and as thoſe which are the moſt adapted to that diſtemper are but trifling and inſignificant, we have thought fit not to trouble the reader with them; looking upon the preſcriptions we have already laid down, to be ſufficient to anſwer all that can be propoſed, ſo far as inward medicines can be ſervicable; and if theſe be complied with in due time, the farcy will never have that tendency to inflame the glandulous parts, and to fall into boils and ſwellings about the ſheath and belly; neither will it degenerate to greaſe, as it often happens when improper methods are taken.

As to thoſe cures which are ſaid to be performed by putting the juice of rue, beets, and other pot-herbs, bay-ſalt, hemlock, henbane, and the like; and thoſe which are conſtantly boaſted of, by tying inſignificant things to a horſe's mane or tail,

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we believe no judicious perſon will give much more credit to them, than we are willing to do; there being very little to be ſaid in regard to the firſt, and the laſt being monſtrouſly rediculous. But any of theſe may ſucceed, if to them be added daily exerciſe; and we have been witneſs to ſuch like cures, in a very moderate and beginning farcy; but then it was not the application, but the exerciſe; and nothing is more common among ſome country people, than to bleed a horſe in this diſorder, and ſend him immediately to plow, and while the exerciſe is truly the cauſe of the cure, they generally attribute it to the ſmell of the earth; and agreeable to this is what we find in De Grey, in his Second Book, Chap. ix. towards the latter end of the firſt Section, where, after a great number of inſignificant recipes, he has theſe words:

"But now I will give you, for a cloſe, the beſt and moſt certain cure for this diſeaſe that I ever yet knew, and with which I have perfected more rare cures of this nature, than of all the reſidue before inculcated, and thus it is:

"Take of rue, the tender tops, and leaves only, without any the leaſt ſtalks, a good handful; firſt chop them ſmall, and then ſtamp them in a mortar to a very ointment; when they are ſo well

well pounded, put thereunto of the pureſt white tried hog's greaſe, one ſpoonful; and ſo work them together to a perfect ſalve or ointment; that done, ſtop into either ear this whole quantity, by equal portions, and put a little wool upon the medicines, to make it keep in the better; let him remain in the ſtable four-and-twenty hours, at leaſt; then take out the wool and either put him to graſs, or work him; for the more his labour is, and the more ſpare his diet, the ſooner he will be cured.

"This I recommend to you for the beſt and moſt certain cure that I could ever meet with, for with this receipt only, I aſſure you, on my credit, I have cured more than one hundred horſes; many of which were, by other farriers, deemed incurable, and ſentenced to be food for hounds."

It is very plain, all that rue can do, when uſed in this manner, is but little, eſpecially in the ſpace of twenty-four hours; for it is demonſtrable from the nature of the farcy, as it is a diſeaſe brought on by length of time, ſo it muſt, of conſequence, require time to its removal; and in all chronical diſeaſes, and ill-habits, it is the ſame; and therefore what this author has applied to the rue, was only owing to the exerciſe, though we cannot approve of this method of keeping a horſe to hard labour, and a very ſpare diet too, that being di-

rectly contrary to the nature of all animal bodies whatever, which muſt be enabled to do their work by food; and we are truly of opinion, no horſe was ever yet cured, where this rule was ſtrictly put in practice; but how far he may be indulged in feeding, while the farcy is upon him, any one with a little care and obſervation may, in ſome meaſure, be a judge. What relates to putting rue, and other pungent and ſtimulating medicines, within the ears of a horſe for ſudden diſorders of the head, has been already ſpoken of, where we treated of the ſtaggers, to which we refer the reader. We ſhall therefore go on to the remaining part of the cure, which chiefly concerns the applications made externally.

If due and proper care was taken in the beginning of the farcy, there would be little need of outward means, otherwiſe than by waſhing the ſores with aqua vitæ, brandy, wine, or urine, and ſuch like things.

The frequent miſmanagement which horſes have been expoſed to in this diſtemper, has rendered both the diſeaſe and the cure the moſt complicated and perplexed of any that are to be met with in the whole ſyſtem of diſeaſes; inſomuch that there is ſcarcely an herb, or plant, but what has been internally uſed; and outwardly, there is no poiſon, natural or artificial, that has not had ſome ſhare, either in killing or curing horſes who have

have lain under this malady; but out of thoſe, we ſhall endeavour to make the beſt choice, neither ſhall we uſe them promiſcuouſly, and at a venture, as has been hitherto done by moſt practitioners; but by making the proper diſtinctions, ſuit them, as near as can be, to the variety and difference which is moſt obſervable in the knots and ulcers; but in ſome kinds of farcy, the ſkin is but little, if at all, elevated; only a viſcous matter tranſudes, paſſes through the pores, and hardens like corns; this ſort we have obſerved not to be very difficult, but may be cured chiefly by internals, as they are but ſmall, and accompanied with little or no inflammation; yet, when they continue long, there will be a matter gathered beneath them; the beſt way is to anoint them with oil of bays, with a moderate quantity of quickſilver, and they will ſoon fall off.

When the diſeaſe makes its appearance in tumours that elevate the ſkin, if they continue ſmall they will probably end as the other; therefore the farrier ought not to be too buſy to ripen them, but leave them, as much as can be, to nature; for that kind of matter very often finds a paſſage for itſelf through the pores of the ſkin, and what is not turned to matter, is waſhed back again with the refluent blood.

Knots and tumours are ſometimes ſo diſpoſed, that without coming to a laudible digeſtion, they

grow fungous and open like a ſponge, and tranſmit a great deal of viſcid matter through an infinite number of little holes and interſtices in that looſe ſubſtance. This is a bad ſort of the diſeaſe, and is apt to degenerate into ſores; but the beſt way to manage in this caſe, and prevent its having an ill tendency, is to dreſs them with the following ointment:

Take turpentine, eight ounces; quickſilver, four ounces; calamine, prepared, one ounce; rub the mercury and turpentine together, till they are well mixed, then add the calamine, and make it into an ointment for uſe.

Spread this upon pledgets of tow, and apply them upon the ſores.

The turpentine will draw out the ſuperfluous moiſture, and the quickſilver will keep the excreſcences aſunder.

This is a moſt excellent remedy, and much preferable to any thing elſe ever invented; and will ſeldom or never fail making a perfect cure, if it be made uſe of in time, and the ſores dreſſed with it once a day, or once every other day.

The moſt common and ordinary caſe is, where the knots riſe pretty high, and are painful to the touch, but at the ſame time give no ſigns of their coming to digeſtion; while they continue ſo, let the

the horſe have daily the antimonial balls, whereby the matter which forms the cords and knots may thereby be attenuated, ſo as it may be carried along with the current, or may find a paſſage through the pores; for it is every one's buſineſs, as much as may be, to avoid their breaking and turning to ulcers.

The endeavouring unſkilfully to digeſt and break thoſe blind and dry knots, which of themſelves have no tendency to ripen and turn to matter, is the reaſon why they ſo often degenerate into indurated and hard excreſcences, which we daily obſerve are ſo difficult to be removed; therefore, while the proper means are uſed inwardly, which muſt never be neglected till the diſeaſe is quite conquered and overcome, outwardly may be made uſe of the camphorated ſpirit:

Take ſpirit of wine, rectified, one quart; diſſolve three ounces, or as much camphor as the ſpirit will take up, with which waſh the knots very often.

If the knots grow ſoft, and yield to the impreſſion of your finger, in this caſe they ought to be opened as ſoon as they come to maturity, eſpecially thoſe that are the largeſt, to prevent the matter returning into the blood. Although a ſmall quantity of matter taken up, and waſhed back into the veins with the refluent blood, may be of

of no ill conſequence, yet when there happens to be much of it, and that its diſcharge is prevented by the thickneſs of the ſkin, as is pretty uſual to horſes, it is not unlikely that the matter, when it returns in this manner, may, by its acrimony and ſharpneſs, abrade the ſmall veſſels, and thereby cauſe freſh eruptions on other parts of the ſkin; or if that does not happen its ſtay and continuance may cauſe a very ill diſpoſition of the part, eſpecially in thoſe tumours and knots that are ſeated near the glands and kernels. There are various ways of opening thoſe little tumours; ſome farriers prick them with an awl, a large needle, or other ſharp inſtrument; ſome pierce them with a ſmall iron, rod-hot, and ſomewhat rounded at the end; but many of our common farriers pull out the knots with pincers; and there are ſome who uſe no other method of killing the farcy, as they often term it, than by giving the fire.

No doubt all theſe methods may be practiſed in this diſorder in ſome particular circumſtances; but the way of treating thoſe tumours ought to be ſuited to their various diſpoſitions. While they are nothing but ſmall puſtules, full of matter, neither the fire nor hot iron is neceſſary; but a ſharp inſtrument with a keen edge, particularly a lancet, or inciſion knife; neither ſhould they be pierced or bored, and then have tents

thruſt

thruſt into them; but the orifice made large enough to diſcharge the matter, for the moſt ſimple ſore may eaſily be changed to an ill-diſpoſed ulcer by the uſe of tents.

If the ſores have no bad tendency, they need only be dreſſed with warm turpentine, common tar, or the preſcription before mentioned, keeping your horſe covered with a ſheet; and if they be ſometimes waſhed with warm brandy, or ſpirit of wine, it would be very proper.

This method will be ſufficient to cure all thoſe knots that are of a moderate ſize, and eaſily ripen; but when there happens to be ſome that are pretty large, and can neither be diſcuſſed nor brought to matter, in that caſe, if they were to be cut with a ſharp cold inſtrument, there probably would nothing iſſue out but blood, and the wound would ſoon cloſe again; therefore to them a hot knife, or a hot iron, is the moſt proper; but then the farrier ſhould know very well upon what grounds he meddles with them.

We ſhall now conſider the farcy in its more advanced ſtate, viz. when it becomes attended with ill accidents; to underſtand it properly the farrier ought to be pretty well inſtructed in the art of ſurgery; for, as we have already obſerved, the moſt ſimple knots and tumours may, when they are ill managed, degenerate into ulcers; we find this to be true by daily experience; for there is

ſcarcely

ſcarcely an ulcer or preternatural excreſcence of any kind, which can grow out upon an animal body, but what is often the effect of this diſtemper, and proceeds chiefly, as we have alſo taken notice, from the want of proper medicines internally; or even when the medicines, though well adapted, have not been continued long enough to do their buſineſs. The compelling nature in bringing thoſe to ſuppuration and matter, which, in themſelves, have no tendency to it; the inducing a bad diſpoſition into the ſores and ulcers by the application of fat greaſy medicines, and inincloſing of foreign bodies within them, as tents made of the pith of elder, and other ſpongy things, and even thoſe of flax; the injudicious application of hot, cauſtic, and corroſive medicines, and of the fire itſelf, the expoſing the ſores to the ſharp air, and a great many other ſuch like errors—

That all theſe things may be made as eaſy and intelligible as poſſible, we ſhall reduce the whole method of cure in thoſe obſtinate caſes to three principal intentions. The firſt is the cleanſing the ulcers from foulneſs; the ſecond, to ſuppreſs a luxuriancy and falſe growth of fleſh; and the third, to deſtroy any ſuch excreſcences when grown; and in this laſt, there are alſo ſeveral intentions, as we ſhall ſhew hereafter. As to the firſt, if the farcy knots have been opened, and are degenerated

degenerated into foul ulcers, if theſe are not deep, and their lips grown callous and hard; the unguentum Ægyptiacum, made chiefly of honey and verdegris, which is ſufficiently in the acquaintance of all farriers, will for the moſt part anſwer that end; or the ointment made of quickſilver and turpentine, as before preſcribed, or baſilicon mixed with red precipitate, in the following manner:

Take red precipitate, half an ounce; rub it in a ſmooth mortar, until its ſhining particles are deſtroyed; then mix it very well with two ounces of baſilicon, to dreſs the ſore.

The precipitate is a moſt excellent medicine when it is thus prepared, but in the way the farriers uſe it, it ſeldom ſucceeds, becauſe they apply it in a rough groſs powder, as it comes from the elaboratory of the chymiſts, and that alſo in a very large quantity, which inſtead of bringing an ulcer into a good diſpoſition, makes the ſore rankle and become ten times worſe. We know this is alſo practiſed by ſome ſurgeons, and one of conſiderable name and practice approved of it in our hearing, though we muſt needs ſay, it is contrary to our frequent experience; and it is likewiſe contrary to the true intention of that medicine, which is only to cauſe a purer digeſtion by inſinuating its finer and more ſubtile parts into the little canals and pipes, thereby forcing

through their obſtructions; whereas, when it is applied in a groſs powder, as it is endued with many ſharp points, it only increaſes the influx of matter by wounding thoſe tender fibres, and thereby cauſes a greater derivation of humours with the moſt exquiſite pain to them, which ought to be avoided by every good ſurgeon and farrier; but thoſe who love to ſee a great quantity of matter follow their dreſſings, may have their expectation very nearly anſwered by the application of glaſs powder, the ſand of an hour-glaſs, or any thing elſe that is ſharp-pointed or cutting; but in ſome inſtances a milder medicine than levigated precipitate may even be uſed, as the dulcified or ſweet mercury, made into powder in the ſame manner as the former, and it will anſwer the end with equal ſucceſs. As ſoon as they become clean and ſmooth at bottom, and begin to fill up, they need only be dreſſed with honey mixed with ſpirit of wine, which will both cleanſe and heal them; or, to make the dreſſing ſit on the better, it may have turpentine added to it.

The ſecond intention, or the ſuppreſſing and keeping down proud and fungous fleſh, may be done by the uſe of gentle cauſtic medicines, as waſhing the ſores with blue, green, or white vitriol-water, but the blue is the ſtrongeſt, and may be made by putting an ounce of Roman vitriol to a pint of fair water, and letting it ſtand till it is all diſſolved. The way of applying this is by dipping

dipping tow into the ſolution, and when you have ſqueezed out the moiſture, apply it as dry as may be to the ulcers; and if bandage can be conveniently applied over them, it will reſtrain the growth of proud fleſh, unleſs the horſe be inwardly diſordered, which muſt be carefully regarded, that your applications may be ſuited accordingly.

If the proud fleſh riſes very faſt, you may apply the powder of blue vitriol alone, and if the part will not admit of bandage, you are to ſupply the want of it as much as you can by applying dry lint over the powder to a pretty good thickneſs, and above that a plaſter of Burgundy-pitch, or ſome other plaſter that will ſtick very faſt; and if you can incloſe a thin plate of lead wrapped up in the flax, it will be very convenient, becauſe the weight and preſſure upon the part will very much contribute to this intention.

There are many other medicines of this kind that may be uſed with ſucceſs, as the vitriol-water preſcribed for rheums in the eyes, and likewiſe the blue-water, and the ſolution of the lapis mirabilis out of Solleyſell, or the powder of the ſaid ſtone, all which may be ſeen in their proper places, and many other things may likewiſe be met with in the books of the beſt farriers, which may be uſed in the like caſe, which we ſhall hereafter inſert; we ſhall therefore proceed to the laſt intention, which was mentioned in the cure of the farcy, viz. by laying down a proper method

whereby to deſtroy all manner of excreſcences, which have either been occaſioned by ill management, or have baffled the common or ordinary means uſed to prevent them; and herein we have undertaken a very hard and difficult taſk; and ſuch as thoſe pieces of imperfect fleſh, which we have obſerved to ſhoot forth from the little ulcers in various aſpects, ſome reſembling a hen's fundament, and ſome (as is not uncommon to excreſcences of that kind) having no diſtinct reſemblance to any thing in nature, but as they all agree in their compactneſs and ſolidity, whereby they have ſeldom any great tendency to waſte after they have once acquired ſuch a diſpoſition; the method propoſed in this intention may therefore be put in practice, ſo as they may be altogether rooted out, and this is to be done either by cutting or burning, or both, according as different circumſtances may require.

The knife is the moſt expeditious in all caſes where they are looſe, and not firmly ſeated with a large adheſion to the fleſh; and when they lie off from the larger veſſels, applying afterwards ſome cicatrizing medicine; but this method cannot be obſerved with reſpect to the whole, but only to thoſe which by accident put forth in ſuch a manner, and therefore burning medicines or the fire itſelf, may alſo be uſed.

It ought carefully to be taken notice of, that in all caſes where medicines are to be applied, whoſe

whoſe immediate operation conſiſts in conſuming the part to which they are laid, if the diſeaſe be univerſal, and ſpread over divers parts of the body, at once, as that under our preſent conſideration, thoſe of the mildeſt operation are firſt to be complied with, and that they may the more eaſily take effect, the parts ought to be rubbed till they become ſomewhat raw, or be gently ſcarified with a fleam.

Secondly, If recourſe muſt be had to more powerful medicines, or to the uſe of fire, as is neceſſary in obſtinate caſes, and if there be a vaſt number of excreſcences to be deſtroyed, and theſe ſeated in divers parts of the body, you ought not to attack them all at once, but by degrees bring ſome to digeſtion and matter, before you begin with others; for the communicating too great a heat to divers parts of the body at once, as muſt happen from ſtrong cauſtic medicines, or actual fire, will either deſtroy your horſe by throwing him into violent and ſudden diſorders, or at leaſt create a bad diſpoſition, which, inſtead of making a cure, will render him much worſe, as may be eaſily demonſtrated.

Thirdly, The ſituation of the parts is alſo very much regarded in this intention; and all ſuch harſh applications ought to be gently and ſparingly uſed to the limbs and dependent parts, and likewiſe to the ſheath and other ſoft parts, to the region

region of the heart and kidneys, &c. and when they have beenapplied, the venom ought to be taken out of them with all poſſible expedition, by ſcarifying the burnt fleſh, and uſing ſuch dreſſings as are able to keep down an increaſing inflammation, and bring them ſuddenly to matter.

Laſtly, While theſe operations are performed, a more than ordinary care ought to be taken in a horſe's feeding, and if he be perceived to loſe his appetite, as that is a ſign they have been carried to the height of his ſtrength, a ſeaſonable ſtop ought therefore to be put to them, and he ſhould be continued to a middling diet, gentle but daily exerciſe; and ſometimes opening and laxative clyſters may be exhibited during the whole courſe of ſuch applications.

A certain author ſays, the farriers his old maſters took white precipitate, or corroſive ſublimate of mercury, and after opening the knots, they put a ſmall quantity into each, which in a ſhort time made them fall off; but it ought to be very cautiouſly uſed, otherwiſe it will cauſe very dangerous ſwellings on the limbs, and kernels about the throat, as in an inſtance we ſaw not long ago, but this caution is hardly neceſſary to the country farriers, who ſeldom call for it by the name of corroſive ſublimate, as we have taken notice ſeveral times, ſo that the apothecaries give them mercurius dulcis inſtead of it, which, although it does not form

any

any thing like an eſchar, though they pepper them very ſoundly with it, yet it is not always attended with ſucceſs.

The following is from Solleyſell; he calls it the ointment of Naples, having had it communicated to him by a Neapolitan groom, after he had ſeen many ſurprizing cures performed by it; but although it has been uſed with ſucceſs in every ſtate of the farcy, according to that author, yet it is more peculiarly adapted to deſtroy excreſcences, as it is made up of ingredients that are altogether cauſtic and ſomewhat ſtronger than that which we have before inſerted.

Take corroſive ſublimate, arſnic, and euphorbium, of each an ounce; make them into a fine powder, and with a ſufficient quantity of hogslard make a ſoft ointment for uſe.

Keep the ointment in a glazed pot, and when you have occaſion to uſe it, open the knots or ſwellings with a lancet, and put into the hole a little cotton, dipped in this ointment, without heating in the leaſt; the next day, if you perceive it is fallen away, you muſt put in a little cotton with ſome freſh ointment; but if it ſticks, one application will ſuffice.

Theſe may be made ſtronger, or weaker, according as you mix them with a greater or leſſer quantity of ointment, and may be diverſified by changing one ingredient for another, providing you

you keep a ſufficient quantity of thoſe that are cauſtic.

Any of theſe ingredients uſed dry, will yet be of more ſudden efficacy; unſlacked lime, or the capital ſope-leys, evaporated to a dryneſs, will have the ſame effect; or the lunar cauſtic, ſo much in the acquaintance of ſurgeons; and, in fine, all things that are plentifully ſaturated with fire. But in the farcy, they ought to be guarded, and made more moderate, as in the manner before preſcribed; neither is the actual cautery, or fire, to be applied otherwiſe than an auxiliary, and to aſſiſt in other intentions, viz. to keep down a luxuriant and freſh growth of proud-fleſh, after the knife, or the more gentle cauſtics.

## *SECT. XXX.*

### OF THE MANGE.

THE diſtemper we have treated of in the perceding Section, has its chief ſeat in the ſkin and fleſhy pannicle; nevertheleſs that which comes under our immediate conſideration, is yet more ſuperficial, being principally ſeated on the ſurface of the ſkin only, and ſcarfskin; therefore as the mange is thus circumſtanced, it is ſeldom attended with pain or inflammation, but only with an intolerable itching; that thin membranous

branous tegument, not being endued with any tender ſenſation, as has been obſerved in the beginning of the anatomical part; but yet if a horſe has been ill-managed, or that the diſtemper has been long ſtanding, it is then apt to degenerate from what it was at firſt, and taking deeper root, it cauſes boils and ſores, which often have a very ill tendency.

The cauſe is from too great a quantity of viſcid ſerum, bred in the bodies of horſes by corrupt and foul feeding, as the eating of grains, a too frequent uſe of hot maſhes, want of due exerciſe, and the want of good currying, eſpecially to a horſe that has been uſed to it; for, by that means, the pores become obſtructed, and the ſeroſities of the blood are thereby accumulated in the ſmall veſſels of the ſkin; ſometimes it proceeds from want of food and due nouriſhment, whereby the blood being depauperated, is rendered unable to reach the paſſages of the ſkin, to make a ſecretion there, ſo that its ſerous parts being detained in the ſmall veſſels, grow corroſive, and break through the ſkin, and ſometimes it is cauſed by infection from other horſes.

The ſigns are the falling off of the hair, eſpecially about the loins and hams, and from moſt or all of the joints, according as the diſtemper is more or leſs prevalent; ſometimes from the head and neck, but very frequently from the rump; the ſkin in

theſe parts, by reaſon of the heat and corroſiveneſs of the matter, turns thick, hard, and ſometimes cruſted like that of an elephant, from whence ſeveral farriers have termed it the elephantic malady.

As to the cure, moſt farriers lay a great ſtreſs in bleeding, inſomuch that they drain away blood from ſeveral parts of the body at once, viz. from the neck, the plate veins, the tail, and ſometimes from the flanks; and all this from a firm but ignorant conceit, that in the mange the blood is full of corruption; which, upon examining what has been already ſaid, will be found a ridiculous practice, and very pernicious, eſpecially to thoſe horſes that are low and out of heart; as nothing ſo often makes the diſeaſe degenerate into an ill habit, which may eaſily be followed by boils and ulcers, as it weakens the whole body, and thereby adds to that which is the cauſe of the diſtemper.

Therefore all that can be propoſed by bleeding, is to leſſen the quantity thereof, when it happens to be redundant in a horſe, in order to give a freer paſſage and circulation to the juices in the extreme parts, that the ſecretions of the ſkin may be duly performed, and this we judge very neceſſary; after once bleeding, the following drench may be given:

Take jalap, in powder, an ounce and a half; ſal polychreſt, and cream of tartar, of each one ounce;

ounce; caraway-ſeeds and aniſeeds of each an ounce and a half, in powder; mix them in a quart of warm water for one doſe.

Or,

Take ſenna, three ounces; boil it in two quarts of water to one quart, then ſtrain it, and add jalap and cream of tartar, of each an ounce; and buckthorn ſyrup two ounces.

Either of theſe may be given, with the uſual precautions, but they ſhould not be often repeated; for purging is no otherwiſe neceſſary for the cure of the itch than bleeding, and only gives it a gentle help when rightly uſed, as it cools and refreſhes a plethoric and full-bodied horſe.

After theſe things recourſe muſt be had to outward applications, for it is theſe alone that muſt give the finiſhing ſtroke to it, as the diſtemper is ſeated outwardly and not deep-rooted; for that purpoſe, nothing has ever been found more effectual than ſulphur, for which it bears the teſt of all ages, and if it ſometimes proves otherwiſe, it is altogether owing to the ill management of it, or the other prepoſterous methods that are made uſe of along with it; the following will kill any mange in the beginning:

Take flour of brimſtone, elecampane-root, and white-hellebore, all in fine powder, of each ſix ounces; black-pepper, powdered, and oil of tartar, of each one ounce and a half; ſtrong mercurial ointment, ſix ounces; hogs-lard, three pounds; mix them well together into a ſoft ointment.

Or,

Take white precipitate, half a pound; hogs-lard, ſix pounds; eſſence of lemons, one ounce; mix for an ointment.

Or,

Take camphor, two ounces; let it be rubbed down with a ſufficient quantity of ſweet oil; then add white-hellebore, ſix ounces; flowers of ſulphur, one pound; mix them well together with a ſufficient quantity of hogs-lard to form a ſoft ointment. The camphor makes this ointment much more reſolving and diſcutient than the one before it.

Either of theſe being rubbed upon the parts once in twenty-four hours, will kill the mange in a few days; neither will it be neceſſary to fret the ſkin to a rawneſs; for, inſtead of doing good, that method proves more frequently prejudicial, as it excites much pain, whereby a too great deriva-

tion

tion of the humours is cauſed towards the infected parts, which is the reaſon why even the beſt farriers are obliged to have recourſe to cauſtic medicines, the diſeaſe being grown too powerful to be deſtroyed by thoſe of a milder operation. The uſe of coperas-water, and alum-water, is likewiſe prejudicial in moſt caſes, as we have often obſerved; all that theſe can contribute towards the cure of the mange, is only by allaying the heat and itching, in which they ſometimes ſucceed; yet as they obſtruct the pores very much by hardening the ſkin, they make it liable to crack, often rendering thoſe parts ſubject to freſh heat and inflammation, by which it degenerates to ulcers and boils. The beſt way therefore is only to rub the mangy places gently, with a woollen cloth, to produce a moderate heat in the part, by which means the ſulphurs will penetrate through the pores, into the ſmall canals and veſſels, with greater certainty than when they are daubed upon places that are raw or incruſted.

This is the true method of curing the mange.

Some make a mixture of quickſilver and brimſtone, together with an addition of ſoot and blackſope, which in ſome moiſt and watery caſes may be uſeful.

Others uſe arſnic, quickſilver, and ſome burning cauſtic remedies; but theſe ought never to be meddled with, except in very extraordinary degenerate

generate circumſtances, and when there happens to be excreſcences that are dead, and without ſenſe, which can by no means be brought to yield to milder methods; but in an inveterate mange, it will be of the greateſt ſervice to give your horſe the remedies as preſcribed in the ſection of the farcy.

## *SECT. XXXI.*

### OF TUMOURS, IMPOSTUMES, AND ABSCESSES.

BY a tumour is meant the elevation, riſing, or protuberance, of ſome part of the animal body into a preternatural ſwelling; in what manner that comes to paſs has been, in ſome meaſure, ſhewn in a former ſection; where we have taken notice, that as often as the blood or juices happen to be very much obſtructed in the ſmall veſſels of any part, that part will be ſtretched out beyond its uſual dimenſions, eſpecially as there is a perpetual influx and ſucceſſion of the ſame fluid from the circulation; to which we ſhall add, that theſe obſtructions are cauſed either by the quantity or quality of the ſaid fluid, whereby it preſſes and ſtretches out one part more than another;

another; or when any part happens to be hurt or weakened by external accidents, whence, being unable to make any equal reſiſtance with the reſt of the body, it will at length receive ſuch a quantity of fluid as will raiſe it into a tumour.

The learned authors on ſurgery, in all ages, carefully following one another's ſteps, have reduced all tumours to four general kinds, viz. the natural, encyſted, critical, and malignant; and under theſe they have ranked all the other ſpecies. But this diviſion is neither in itſelf very accurate, nor rightly ſuited to our purpoſe; as our buſineſs is with horſes, we ſhall therefore reduce them to the natural and encyſted only:

Of the firſt of theſe, are all kinds of boils and inflamed ſwellings, and, in ſhort, whatever tumours are formed originally by the fluids diſtending their proper veſſels, whether they be critical or malignant, for theſe differ only in degree from other natural tumours.

And of the ſecond, are all thoſe that are formed within membranous cyſts or bags, as wens, anburies, and ſome other ſorts which are called figs, and other excreſcences that grow on the external parts of the bodies of horſes; and this agrees the beſt with what thoſe authors have obſerved, with reſpect to the formation of all tumours, by fluxion and congeſtion. Thoſe tumours that are large, come

cometo a ſuppuration, and have matter gathered within them, whether they be natural or encyſted, are termed *impoſtumes;* and when the matter is lodged within the common, but chiefly the largeſt interſtices of the body, as thoſe furrows or vacant ſpaces between the muſcles, or between the muſcles and bones, they are then called *abſceſſes;* but all abſceſſes, and moſt kinds of impoſtumes, are formed of natural tumours.

We ſhall conſider all tumours, whether natural or encyſted, in the following order, viz.

Firſt, With regard to their magnitude and ſituation, there being little to be learnt from their figure or colour, eſpecially in horſes.

Secondly, With reſpect to the matter whereof they are formed.

And, laſtly, We ſhall lay down ſome general rules to be obſerved in their cure.

Firſt, When a tumour happens to be ſituated upon any part, where there is no depth of fleſh, as on the noſe and upper part of the face, it will not be apt to grow large; or if it be ſeated on the ſkin or fleſhy pannicle, and free from the ſubjacent muſcles, it cannot be ordinarily expected to grow to any bigneſs, there being no ſufficient ſource for its ſubſtance and increaſe, as we have obſerved in a former Section; and as thoſe little

tumours

tumours very often ſpread themſelves over divers parts of the body at once, being thruſt out in that manner, becauſe of their contiguity with the ſkin, which in ſome delicate animals is able to give little or no reſiſtance, they are therefore more unlikely to alter their ſize, ſince it is very reaſonable to ſuppoſe they make a revulſion from each other, whereby the matter, which might have otherwiſe been diſcharged by the common and ordinary ſecretions, or caſt off in one large critical tumour, is evacuated by a vaſt number of tubercles and little hurdles.

Though tumours, thus ſituated, do not ordinarily grow to a great ſize, yet as all animal bodies are made up of veſſels capable of extenſion and dilatation, when there is a continual addition of freſh matter, therefore ſome tumours that are very ſuperficially placed, and have but a ſmall beginning, will increaſe to a very large bulk.

It is from hence we may account for wens, anburies, and all other excreſcences; for inſtance, when ſome duplicature of a membrane, or ſmall veſſel, is by an accumulation of matter protruded or thruſt forth beyond the common limits of a horſe's body, in ſuch a manner as gives no great diſturbance to the circulation of the fluids that are within; therefore, as theſe are not apt to

cauſe pain, they will therefore grow in proportion to the quantity of matter which is emptied into them; and nature ſo far encourages their growth, as to enlarge thoſe veſſels which nouriſh the ſkin, and other integuments, wherein that matter is contained.

It is quite otherwiſe with thoſe boils and tumours that are ſeated in the fleſhy and muſcular parts; for as they occaſion violent pain by ſtretching out the veſſels and fibres, and as the pain cauſes a conſiderable afflux of matter, therefore any ſwelling formed that way, muſt have a ſpeedy iſſue and determination by the burſting of the ſaid veſſels: and as it likewiſe cuts off all communication of the blood in thoſe parts, therefore it will become a running ſore, until there is a re-union of the parts that were toren and disjoined.

All ſuch ſwellings are uſually larger or ſmaller, according as their ſituation is more or leſs in the thick fleſh, or according to the multiplicity and ſize of the veſſels which go to their nouriſhment; and likewiſe as the matter finds more or leſs room for itſelf, as happens in abſceſſes. The dependency and ſoftneſs of the part contributes alſo to the augmentation of the ſwelling and increaſe of the matter; becauſe the return of the blood is but ſlow from the inferior and dependent parts, and becauſe the ſoft parts are eaſily ſtretched out when once the blood has taken a tendency towards

wards them; which is plainly evident from thoſe ſudden and exceſſive ſwellings which ſometimes ariſe in the fundament and ſheath.

The bones and ſinews are alſo liable to the like infirmities; yet the ſwellings which happen to them and other compact parts, ſeldom riſe to any extraordinary bulk, becauſe of their ſolidity and hardneſs, which hinders their being extended; but, for the ſame reaſon, makes them very tedious and difficult to be removed. If a horſe is put to much exerciſe while the ſinews are relaxed, the pain and anguiſh will cauſe a ſwelling in the neighbouring fleſh, and this we may frequently obſerve in ſprains of the ſhoulder, back, and limbs.

As for tumours in the bones, horſes are indeed not very much ſubject to, except when they are cauſed by old ulcers that corrode and penetrate to the bones; this is plain enough in thoſe horſes that have been foundered, and battered in their feet for ſome conſiderable time, where the diſeaſed foot may be obſerved to grow much larger than the other, the coffin-bone being often in that caſe affected. Neither is it improbable that ſome of thoſe horſes that are very large-jointed, miſſhapen in their limbs, and narrow-cheſted, have had their bones diſeaſed while they were young and pliable, not unlike thoſe of ricketty children.

The ſwelling of the glandulous and kernelly parts are alſo very troubleſome, as cannot be unknown to any farrier of practice; though ſometimes they will come to as quick and ready a diſcharge as thoſe of the muſcular fleſh; when this happens, nature is in her full vigour, and the horſe is otherwiſe ſound and able to feed; but when a horſe is weakened, and brought much under by any lingering and waſting diſeaſe, a ſwelling in the glands will often continue hard and immoveable, without much pain, increaſe, or diminution; this is very much owing to the ſtructure and make of the kernel itſelf; though it be but a ſmall part, yet it is ſo compact, its veſſels ſo ſmall, and cloſely laid together, as cannot but render them eaſily obſtructed. But yet in the caſe we have mentioned, when a horſe has a lingering diſeaſe upon him, the ſwelling does not readily increaſe, becauſe the matter is but ſlowly derived towards it; likewiſe, as the paſſages of the gland are more than ordinarily enlarged, therefore a quantity of matter is diſcharged proportionably to the ſupplies it receives; and the ſmallneſs and compactneſs of the veſſels, and their diſpoſition into an infinite number of circumvolutions and turnings, is alſo the cauſe why the ſwelling does not eaſily decreaſe.

Thoſe ſwellings of the glandulous parts that turn to impoſtumation and matter, are many of them of the encyſted kind, and that is alſo owing to

to the ſtructure and make of the kernels; moſt if not all of them having little cyſts, or recepticles, for their proper juices, which may be eaſily filled and enlarged when their excretory ducts are wholly or in a great meaſure ſhut up, as muſt undoubtedly happen in all ſuch caſes.

We come ſecondly, to take a view of thoſe ſwellings, with regard to the matter whereof they are formed, and here it will be neceſſary to conſider that the matter becomes various, according to the various diſpoſitions of horſes, or according as the tumours are variouſly diſpoſed and ſeated; for when they happen to be ſuperficial and outward, the matter is thin, and for the moſt part dry, which depends, in a great meaſure, upon their proximity and nearneſs to the ſkin, whereby the thinner parts are the more eaſily evaporated, and caſt off through the pores; though in over moiſt conſtitutions the matter will be humid and moiſt.

The matter derived from membranes and ſinews is generally thin and viſcid, and that which comes from bones is oily and ſtinking; but the matter which is more immediately derived from blood, if a horſe be in good caſe, is of a middle nature, neither too thick nor too thin, neither too watery nor too viſcid.

Thus it ſeems to be very plain and evident, as all matter is formed of blood, or the juices produced

duced from it, the matter in all tumours will therefore participate chiefly of thoſe juices from whence it is immediately derived.

The next thing to be regarded in the matter is its colour; this alſo depends upon the diſpoſition of the blood. If the blood abounds with choler, or gall, the matter will be yellow, and it will be more or leſs ſo according as that is more or leſs predominant. If there is a too great ſecretion of the gall, then the matter will be more than ordinarily white; and in ſome obſtructions, when the blood abounds with earthy parts, or when theſe are eaſily ſeparated, the matter will look foul, duſkiſh, and ſometimes be ſtreaked with black blood; the tumour will alſo look livid, and of a liver colour; and ſometimes from a various combination of humours the matter becomes of different colours.

But, laſtly, what we are farther to obſerve concerning tumours, is to lay down ſome general rules for their cure; here it will be neceſſary chiefly to attend to their ſeveral cauſes; and, firſt, a tumour that comes by an outward accident, can only be dangerous according as the accident is more or leſs violent; but the leaſt accident, where there is a redundancy of blood, may be troubleſome, as well as when a horſe is poor and low. When there happens to be a redundancy, that muſt be removed by bleeding and other evacuations,

tions, as far as is conſiſtent with the horſe's ſafety; but, on the other hand, when a horſe is low and has got ſome waſting diſtemper upon him, beſides the outward applications, care muſt be taken to adminiſter ſuch things as are proper to remove that indiſpoſition. And in all critical ſwellings, by which we chiefly underſtand thoſe that tend to the ſolution of colds, malignant, peſtilential, and other fevers, the management muſt be according as the diſeaſe is perceived to be more or leſs malignant, taking care always to aſſiſt, but never to reſtrain nature; but the reader may conſult the Section of the Strangles.

The next thing to be regarded in the cure of tumours in this ſituation, is what relates to internal tumours and impoſtumations, which has been ſpoken of where we have treated of foundering, and cheſt-foundering, in which we have recommended the ſpeedieſt methods of revulſion by bleeding and purging; but eſpecially by thoſe things that promote ſweat, and keep down pain and inflammation. As to external ſwellings, the principal intention is either to ripen or diſcuſs them, according as may be moſt beneficial. Thoſe which are indurated and hard, without heat and inflammation, ought chiefly to be treated with internals; and ſuch as are very powerful, to open obſtructions with ſuch local applications as are proper to diſcuſs and diſſolve.

Thoſe

Thoſe ſwellings which are hot and inflamed ought to be ripened, unleſs when they are ſeated where they may cauſe too great a derivation of the humours, as on the ſheath, fundament, limbs, throat, &c. but yet if theſe be malignant or peſtilential, it is better to run any hazard than not to bring them to maturity; wherefore the medicines in this intention ought to be ſuch as ripen, but, at the ſame time, are not over-powerful in drawing.

When the tumour is ſeated near the interſtices of ſome large muſcles, it ought to be opened as ſoon as there is matter formed within it; otherwiſe, if the matter be detained, it may ſeparate the muſcles, and thereby form a lodgment for itſelf; and the longer before it is opened, the larger will be the abſceſs.

In the opening of abſceſſes, if they be ſmall, a large orifice made in the dependent and lowermoſt part, with the aſſiſtance of a good bandage to keep the parts cloſe together, will be ſufficient to make a perfect cure; but if they happen to be large and deep, they ought then to be laid open the whole length, unleſs the ſkin can be kept depreſſed by the application of tow into the hollow part; for ſo long as there is any lodgment for the matter, the abſceſs will be conſtantly filled; the ſame method is to be obſerved, as near as poſſible, with reſpect

to

to thoſe tumours that are large, and have a pretty large cavity formed within them.

The proper dreſſing in all ſuch caſes, is turpentine mixed with honey or the yelks of eggs, with a ſmall quantity of brandy or ſpirit of wine; and in moſt caſes, where there is not an ill habit of body, this will be ſufficient to make a cure.

Wens, anburies, and other encyſted tumours, require a peculiar treatment, and for the moſt part ought to be quite extirpated; the anburies, which we obſerved frequently to hang at the legs, and ſometimes at divers other parts of a horſe's body, conſiſt only of a thick jelly, or ſpongy ſoft fleſh; as theſe have generally a ſmall neck to their inſertion, they may be taken off without much trouble, only by tying a waxed thread round them, tightening it by degrees; if after they are fallen off there be the appearance of a freſh excreſcence, that may be taken down by the help of ſome gentle corroſive, together with the uſe of a bandage, and for this purpoſe tow dipped in vitriol or alum-water will ſuffice.

To a wen, or any other tumour of that kind, that grows to any bigneſs, a hot knife muſt be uſed when it happens to have a narrow root; but if you have reaſon to ſuſpect the veſſels which lead to it become very large, whereby a too plentiful effuſion of blood may happen, or if it be broad at bottom, the beſt way is then to open it, cutting

the ſkin both ways acroſs; if there be matter within it, that muſt be evacuated, and then the bag and other ſuperfluous parts deſtroyed by degrees; which may be done either by cutting, burning, or by the uſe of cauſtic medicines; but the knife is the moſt expeditious, and if it be of ſubſtance to keep the heat, it may be made to anſwer in moſt caſes.

The ſwellings of the joints, and relaxation of the ſinews, are no otherwiſe to be treated than by applying ſuch things as are proper to diſcuſs and ſtrengthen them, but the accidents to which theſe are chiefly expoſed, will be particularly handled in ſome of the enſuing Sections.

## *SECT. XXXII.*

### OF WOUNDS.

WHEN any part of a horſe's body is cut, torn, or otherwiſe divided, he is then ſaid to be wounded, ſo that wounds are various, and differ one from another according to the diverſity of accidents by which they are cauſed; ſome are ſuperficial, and others deep; wounds happen ſometimes to be ſtreight, according to the tenour and direction of the fibres, ſometimes they are

are oblique or tranſverſe, that is, ſlanting or athwart. If the inſtrument be ſharp, the parts will, generally ſpeaking, be equally divided, but if otherwiſe, the wound will be ragged and toren, which is uſually the caſe of horſes that have been ſtaked.

We alſo diſtinguiſh between wounds that are ſimple, and wounds that are complicated; thoſe are ſaid to be ſimple, where the ſoft parts are divided without the concomitancy of other accidents; and thoſe wounds are termed complicated, where, beſides a diviſion of the ſoft parts, there is alſo a contuſion of the fleſh, a fracture or diſlocation of the bones; all which circumſtances make the cure of wounds more or leſs difficult.

The chief things to be regarded in wounds is their ſituation; for though wounds in the external fleſhy parts are not dangerous, nor conſidered as ſuch, yet thoſe of the nervous parts are often of bad conſequence when there happens to be an ill diſpoſition of body, as they are apt to cauſe exquiſite pains; and ſometimes, when the ſmall threads and fibres of the ſinews are divided and broke, they will bring on a gangrene and mortification of the part; whereas, when they are equally cut, they are not apt to be attended with ſuch accidents.

Inward wounds generally prove mortal if they pierce the large veſſels, the ſtomach, the ſmall

guts, the bladder, the ſpleen, the liver, the heart, the lungs, or the midriff; and theſe are deadly upon a double or treble account, as moſt of them are not only endued with a tender ſenſation, but alſo a muſcular action, whereby their re-union is hindered, and likewiſe as many of them are ſtored with a multiplicity of blood-veſſels which are large. Internal wounds which miſs the principal viſcera may be cured, and ſome of theſe, if they be but ſlightly touched, are likewiſe curable, though not readily in brute creatures, who cannot be brought to a compliance with all the requiſites that are neceſſary in ſuch caſes.

Wounds penetrating the ſubſtance of the brain are alſo incurable, becauſe of its ſoftneſs, the multiplicity of its veſſels, and the tender ſenſe of its membranes.

As for the ſigns of wounds, they are manifeſt to the eye, and when they are deep or inward, they are farther diſcoverable by the help of a probe, and by divers other circumſtances; for inſtance, if the lungs be wounded, the air will penetrate through the wound with a frothy blood, of a vermilion colour; when the ſtomach is wounded, there will be violent ſickneſs, with a ſudden loſs of appetite; the chyle uſually iſſues forth from a wound in the ſmall guts; the urine from a wound in the bladder; and when the kidneys are wounded, the horſe will ſtale blood; by theſe and many other ſuch ſigns, internal wounds may

may be known; but we ſhall proceed to the cure, wherein we ſhall begin with ſome general directions:

Firſt, care muſt be taken to ſtop the bleeding when there is too plentiful an hæmorrhage.

Secondly, the wound muſt be cleanſed of dirt, ſand, ſplinters of wood, or any foreign matter.

Thirdly, all the applications made to the wound ought to be warm, eſpecially in the beginning.

Fourthly, it ought not to be expoſed to the air.

Fifthly, when the wound penetrates downwards, and the orifice happens to be too narrow, it ought to be widened, either by inciſion, or dilated with a bit of ſponge, or ſome other porous matter that will ſwell, but this is only to be done where bandage cannot be applied.

Sixthly, the probe is to be as ſeldom uſed as poſſible, neither ought there to be long tents thruſt into the wounds, for by theſe, wounds that have no bad tendency naturally, often degenerate into ulcers of the worſt kind.

Laſtly, greaſy ointments are for the moſt part to be rejected, as they are apt to cauſe the fleſh to grow too faſt, and when that happens, it muſt be kept down with a good bandage, or the application of cauſtic medicines; but bandage is of the greateſt importance in the cure of all wounds, where

where there are not ſome circumſtances to forbid its application.

To ſtop the hæmorrhage or bleeding, the beſt way is, before the horſe is too much ſpent, to make revulſion by opening a vein on the fore parts, if the wound be backwards; but if the wound be forward, a vein may be opened toward the hind parts. In external wounds, where the hæmorrhage is large, that is generally owing to the ſeat and diſpoſition of the wound, whereby ſome large branch or artery happens to be cut; but if the artery from whence the blood chiefly flows, be not very large, it muſt then be ſuperficial, as about the noſe, temples, or ſkinny part of the legs, &c. where the veſſels are unguarded with fleſh; for though the arteries in a deep wound may pour fourth plenty of blood while it is recent and new, and where there is a free paſſage, yet this occaſions ſo great a derivation towards the wound, that even the coats of all the wounded veſſels become diſtended and ſwelled, ſo that by their preſſure upon one another, their orifices are ſhut up and ſqueezed cloſe together, and in this caſe there is ſeldom need of any ſtyptic application to ſtop the bleeding.

When the wounded artery happens to be very large, or much expoſed, as has been taken notice of, ſo that the blood flows too plentifully, it muſt be ſtopped either by applying a hot iron, or ſome cauteriſing

cauteriſing medicine, otherwiſe it muſt be tiedby paſſing a needle under it, and then binding it with a waxed thread; but neither ligature nor actual cautery are ſo certain as cauſtic medicines; becauſe an eſchar, made by the actual cautery, is apt to fall off too ſoon; and an artery, when it is tied, is liable to take to bleeding as ſoon as the threads rot off, eſpecially one that lies ſuperficial and unguarded, and has not the advantage of being compreſſed by the fulneſs and weight of the ſurrounding veſſels.

Therefore, in this caſe, make a ſmall pledget of flax or fine threads, moiſten it with the white of an egg, then lay as much powder of Roman vitriol upon it as will fully cover the mouth of the artery, and apply it over the ſame; but care muſt be had not to apply vitriol, or any other cauſtic medicine, where the ſinews are expoſed and laid bare, unleſs you can fall upon ſome matter to defend them from being touched by it, otherwiſe it will be apt to cauſe convulſions; but in places where theſe are moſt expoſed, as the legs, &c. the arteries are not very often ſeated cloſe to them, and if it were ſo, milder medicines might be made to anſwer; becauſe what is wanting in the medicine, may in the moſt part be ſupplied by bandage; therefore when the wound happens to be on the leg, you need only apply the aſtringent crocus of

iron

iron, fine French bole, agaric, or powder of dry muſhrooms, mixed with the white of an egg, and ſpread upon a pledget as above directed; and over that, two or three thick compreſſes dipped in the ſame aſtringent, making a firm bandage over all.

The dreſſing ought not to be removed for the ſpace of three days, that the wound may be well digeſted, and there may be no farther trouble with a freſh flux of blood. If a ſwelling happens in the leg, by reaſon of the bandage, bathe it with warm leys of wine, or ſome good fomentation; ſuch as that hereafter preſcribed for a gangrene, afterwards dreſs the wound every day with the common digeſtive. The ſame method is to be followed in thoſe wounds where cauſtic medicines are applied, leſt, by taking off the dreſſings too ſoon, you ſet them bleeding afreſh, by removing the eſchar before it is thoroughly formed.

Becauſe the right ordering of all ſuch wounds, as are attended with an effuſion of blood, is of the greateſt importance, there being few farriers who have ſkill to manage them according to the rules of practice, eſpecially when any uncommon accident happens in the cure; we ſhall therefore lay down a method of making the ſympathetic powder, which being applied to the wound as a ſtyptic, will not only put a ſtop to the blood but procure a ſpeedy re-union.

This

This as Solleyſell rightly obſerves, may be very neceſſary in a camp, where flies and other inſects are hurtful. Solleyſell's way of preparing the ſympathetic powder, is by calcining Roman vitriol in the ſun; but the following method is much more preferable, and only requires a little more pains:

"Take a quantity of Engliſh vitriol, ſuch as goes under the name of *bow copperas*, diſſolve it in water, and filtre it through brown paper, ſet it in a cool place to ſhoot into cryſtals; diſſolve the cryſtals in the ſame manner, and let it paſs through the paper as directed, repeating the operation until the cryſtals are tranſparent and pure. Set theſe cryſtals in a clean pan, in the ſun, either in June, July, or Auguſt, ſo long as till they are calcined to whiteneſs; when one ſide is calcined, turn the other, and in a few days the cryſtals will crumble into powder; if they do not, they may be again beat and expoſed to the ſun, and ſtirred three or four times every day; at laſt, beat them into a very fine powder, and again ſet them in the ſun, ſtirring as before, for two or three days more, in which time they will be very white; then take in the matter while the ſun ſhines hot upon it, and keep it from the air in glaſſes well ſtopped, and in a dry place."

This is the method of preparing the ſympathetic powder, as it is inſerted in Quincy's Diſpenſatory, to which we ſhall ſubjoin another out of the

ſame, that bears the title of *A Reſtringent Preparation of Iron*, and formerly ſold by the name of *Colebatch's Styptic Powder*, which is prepared in the following manner:

" Take a quantity of filings of iron, and pour upon them ſpirit of ſalt, to the height of three or four fingers above them; let them ſtand in a gentle digeſtion till the fermentation is over, and the ſpirit of ſalt is become ſweet; then pour off what is liquid, and evaporate it in an iron or glaſs veſſel till half is conſumed; at which time, put to it an equal quantity of ſugar of lead, and evaporate to a dry powder; if upon its firſt coming dry the operation be ſtopped, it has exactly the appearance of Colebatch's powder, but if it be continued longer and the heat raiſed, it will turn red; it muſt be kept cloſe ſtopped from air."

This ſtyptic may not only be eaſily made, but is the more for our purpoſe, as the doctor made an experiment of its efficacy upon a horſe.

If this is not cloſe ſtopped, it will imbibe the air, and flow ſo as to loſe its efficacy. We have been informed, by very good authority, that this is the ſtyptic with which there was ſo much noiſe made ſome time ago, by the author of the *Novum Lumen Chirurgiæ* (and another has alſo ſtarted lately) for a ſale of which a patent was procured, only in that was uſed oil of vitriol, inſtead of the

ſpirit

ſpirit of ſalt in this, but that difference is inſignificant. Of the one in queſtion we kept ſome by us for a time, to wait a proper opportunity to try it, when an extraordinary one happened by a blundering farrier cutting the jugular artery of a very fine young horſe, as he was pretending to take off ſome kernels which grew under his throat. The blood was ſo prodigious, that the creature muſt have immediately died, had not the fellow held faſt the wounded veſſels, by griping the part with his hands, which prevented the profuſion, until we diſſolved ſome of this powder, or rather ſalt, in ſome warm water, and with curriers' ſhavings of leather dipped in it, applied it upon the part, where tying it as faſt as the part would admit of, and haltering the horſe's head up to the rack for about ſixteen hours, when it was taken off not one drop of blood afterwards followed, and the part was eaſily incarnated and healed up. This is a preparation of Maet's, once profeſſor at Leyden, and is in the *Collectanea Chymica Lugduni*; how much ſoever ſome have pretended to make a ſecret of it ſince, as is now in vogue, and a foreign tooth-drawer pretends to be the inventor of this moſt famous ſtyptic.

The ſame author farther takes notice, that this ſtyptic has been recommended inwardly to ſtop fluxes, eſpecially thoſe of blood; but we are very

ſure it may anſwer that end in all wounds, when applied as in the inſtance recited.

In this reſpect it may be made uſe of by thoſe who are but little ſkilled in the practice of a ſurgeon or farrier; as may alſo the powder of ſympathy, though we cannot advise any one to depend upon its ſympathetic virtues.

Having ſaid thus much concerning the firſt intention, viz. the putting a ſtop to the blood, in caſes where the cut or ruptured veſſels are large or expoſed; we ſhall now proceed to the other requiſites in the cure of wounds.

In the firſt place, take notice that in all good conſtitutions, a fleſh wound will eaſily be cured, if it is not too much expoſed to the air; as we ſee in many inſtances, both in brutes and human bodies; and a wound made according to the direction of a muſcle, or only ſomewhat ſlanting, will heal with little or no application, if the horſe is not put to hard exerciſe; for in that caſe, as often as the muſcle is contracted, the wound will be more or leſs opened, according to the force whereby the wounded member is moved. All wounds that are large, ought to be ſtitched, when that is rightly performed, nothing contributes ſo much to their re-union, as it in ſome meaſure prevents the inconveniences of motion, and likewiſe, as it puts a ſtop to the ſwelling, which without a plentiful and ſpeedy diſcharge, will often

ten cauſe ulceration, together with a preternatural hardneſs in the lips.

Stitching and bandage are nearly allied to each other, and ſometimes the one ſupplies the place of the other; but moſt wounds may be eaſily cured, when ſtitching and bandage can come into one another's aid. Wounds which are large and deep, and which may be preſſed together with your fingers, are the moſt fit to be ſtitched; but wounds that penetrate to the bone, ought not to be ſtitched when the fleſh is much divided from the bone, otherwiſe an abſceſs may be formed, which will cauſe the bone to putrify; the ſame caution is alſo to be obſerved when, by your probe, or by a ſwelling diſtant from the wound, you have reaſon to ſuſpect ſome of the muſcles are divided, as it happens in very large contuſions. In this caſe, bandage is alſo to be made uſe of, with the proper applications to the wound; but if the ſwelling continues, which for the moſt part happens if at all underneath the wound, and therefore becomes unable to bear a firm bandage, it muſt be treated as an impoſtume, by the application of ripening cataplaſms, and when it comes to maturity, it muſt be opened as low as poſſible, that the matter may have a free paſſage and vent, after which the bandage will become of infinite ſervice.

Wounds

Wounds that are of a round and circular figure cannot be ſtitched, but nature muſt fill up that ſpace by degrees; neither can thoſe be ſtitched which are very ragged and toren; but in a wound that has ſeveral points and angles, ſtitches may ſometimes be made to do ſervice, but for this purpoſe no general rule can be laid down. Solleyſell adviſes to cut all circular wounds into a long figure, but that needs ſeldom be done when bandage can be applied, for the only thing that makes a circular wound hard to cure, is when the bottom of the wound happens to be large and looſe, or bruiſed, or when the wound penetrates perpendicularly downwards; in this caſe a moderate inciſion downward may be made, but when a circular wound is not very deep, or if it is not in ſome reſpect like a well or pit, the application of bolſters or bandage, to keep it firm at the bottom, will for the moſt part ſuffice.

Laſtly, the needle is to be ſparingly uſed among the ſenſible and nervous parts, for there are divers circumſtances which may require ſtitching even where the tendons are wounded; yet it may be more particularly gone about where there is a very ſound conſtitution, for an ichor and viſcid matter is perpetually flowing from the tendons, even in the beſt habits, which cauſe numberleſs accidents; therefore as theſe are oftentimes heightened by ſtitching, the practitioner ſhould be very

very well verſed in practice to perfect a cure of ſuch wounds, otherwiſe than by proper and plain dreſſings; for if this operation has not always the deſired ſucceſs on human bodies, who can be managed ſo as to keep the muſcles to which thoſe tendons belong from all manner of action, much leſs can be expected from brutes, eſpecially horſes, who keep more in a ſtanding poſture than any other, therefore are not only obliged and under a neceſſity ſometimes to move thoſe parts, but even at moſt times to lay a great weight upon them.

To perform this operation aright, the farrier ought to be provided with ſeveral needles, ſome ſtreight, and ſome crooked; of theſe, ſome ought to be more arched than others, and accommodated to wounds that are deep; and for this end alſo they ought to be of different ſizes; both the ſtreight and crooked ſhould be edged and not round, that they may the more eaſily penetrate, and cauſe the leſs pain; thoſe that are appointed for deep wounds ſhould be ſtrong, that they may not break, and cauſe trouble in the operation; but in all theſe things the farriers may take pattern from the ſurgeons.

The ſtitching of ſuperficial wounds ought to be performed with a ſtreight needle, and is chiefly neceſſary upon parts that are prominent and expoſed to view, where the ſkin being only burſt, gives way and opens wide, though it be not much ſeparated

ſeparated from the ſubjacent fleſh, and if it is not drawn together, it will leave a baldneſs, or the hair that grows upon the part will be white, and ſofter than that which covers the reſt of the body; either of which becomes a deformity upon the cheek, the top of the loins, or upon any joint, as we ſometimes obſerve when theſe parts have been galled, and where there is no room for ſuch an operation.

In all deep wounds a crooked needle muſt be uſed, and of ſuch a form as will eaſily make a compaſs under the wound, for the farriers' method of tacking the lips together with a common ſewing needle, or packing needle, as we have ſometimes obſerved, is quite ſhort, nay even contrary to the intention of ſtitching, and often does a deal of miſchief, and would do much more if the ſtitches did not ſoon break, as it leaves room for the matter to gather in the bottom of the wound. Therefore, when a farrier goes about the ſtitching of a deep wound, he ought firſt, if there be congealed blood within it, to clean that out, and having preſſed the two ſides together, he muſt make his firſt ſtitch in the middle of the wound, paſſing his needle ſo as to deſcribe a half-circle under it, and with a ſtrong waxed thread, or ſhoe-maker's end, tie the wound cloſe together; the reſt of the ſtitches ought to be made at equal diſtances, and ſo near each other as to keep all parts equally cloſe. They ought alſo to be tied in a bow knot, that

that they may be opened in caſe of inflammation, or matter gathering in the wound; which will ſometimes happen if it is not ſewed up ſoon after it is received.

The cure may be finiſhed by dreſſing the wound every day with pledgets of tow, ſpread with baſilicon, or any other digeſtive, waſhing it often with warm wine, ſpirit of wine, or brandy.

In wounds that are ragged and uneven, any looſe bits of fleſh or ſkin that cannot be again united, ought to be clipped off with a pair of ſciſſars, the dreſſing always made ſo large as to cover the wound, and not to ſink too much into it, for that not only retards the cure, as it hinders the re-union, but often cauſes a bad diſpoſition in the wound itſelf, which is followed with foul fleſh, hard edges, &c.

If the wound penetrates to the bone, no kind of ointment ought to be applied to it, for all greaſy things putrify the bones; therefore let your applications to the bones be only pledgets of lint, dipped in warm honey of roſes, mixed with tincture of myrrh and aloes, until the bone is covered; but if it ſhould by any accident grow foul, the fleſh ought, for the moſt part, to be laid open ſo far as it is diſcoloured, otherwiſe it will be apt to cauſe troubleſome ſymptoms; and if the blackneſs does not come off with the dreſſings, it ought to be ſcraped gently, or have a pledget of lint

dipped in tincture of euphorbium applied to it, which will cauſe it to exfoliate and caſt off the foulneſs, and after it is become clean, apply honey of roſes, &c. as above directed.

A very material thing in the managing of all large wounds, is a dextrous and ſeaſonable application of the dreſſings. A wound that is much inflamed, can bear no firm bandage until the inflammation abates, which generally happens as ſoon as it comes to matter plentifully; after that, bandage will be of great ſervice, and may be made tighter as the wounded part becomes able to endure it; but one thing ought carefully to be obſerved, that all wounds muſt have time to digeſt, after the firſt dreſſing, two or three days, according to the ſize thereof; and when a wound or other ſwelling happens near any cavity, any ſuch cavity ought always to be filled with hurds or bolſters of tow, and kept there with bandage; in this reſpect the following inſtance will be a good precedent:

A horſe was wounded with the point of a fork, on the outſide of the hough, a little above the joint, which being a tender ſenſible part, occaſioned violent pain, accompanied with lameneſs, and brought ſuch a ſudden flux of humours towards the joint, that all the cavity on each ſide, and beneath the maſter ſinew, was ſwelled to a prodigious

prodigious degree, and in a ſhort time filled with matter, and as ſoon as the matter was preſſed out of it, it always filled again, which would ſoon have corroded the ſinew; we adviſed the farrier, after preſſing out the matter, to fill up the empty ſpace on each ſide, under the ſinew, with hurds dipped in ſpirit of wine, to keep the divided ſkin together, and prevent the matter from falling into it; which, with the application of a ſtrengthening charge round the joint, and an eaſy bandage, made a perfect cure in a few days.

We ſhall conclude with ſome obſervations concerning inward wounds, which in a great meaſure depend on the right regulation of a horſe's feeding; for when a horſe is inwardly wounded, he ought to be reſtrained from all ſuch food as is any way hard and binding, having nothing allowed him but ſcalded bran, and ſometimes a little boiled barley; his conſtant drink ought to be barley-water, and at firſt a little ſal prunellæ, or purified nitre, diſſolved in it, as has been preſcribed in a ſimple fever.

The following balls may alſo be given for three or four days, to ſecure him from bleeding inwardly:

Take of green comfrey-root, cleaned and ſcraped, three pounds; roots of white lilies, one pound

and a half; beat them into a pulp in a large mortar; then add dragons-blood and gum-tragacanth, in fine powder, eight ounces; and ſugar of lead, half an ounce; with wheat flour and molaſſes, make it into a maſs, and divide it into doſes of two ounces, each to be given every morning and afternoon.

If the horſe becomes bound in the body, emollient clyſters may be given him, of mallows, marſh-mallows, the herb mercury, the roots of marſh-mallows, and ſuch like things; adding no ſtrong purgative, but rather four or five ounces of treacle or honey, with a ſufficient quantity of oil or butter; and if the guts be wounded, the uſe of clyſters muſt be laid aſide alſo; and if his diet ſhould not be enough laxative, he may be provoked to dung, by the following mild ſuppoſitory:

Take a pound of honey, boil it in a pan or ſkillet till it turns to a dark-brown colour, ſtirring it conſtantly; then take it off the fire, and when it begins to be cold, make it into a roll four or five inches long, and introduce it into the horſe's fundament immediately, otherwiſe it will ſoon diſſolve and turn to liquid. Caſtile ſope may alſo be uſed inſtead of a ſuppoſitory, when it is neceſſary to provoke your horſe to dung.

Into

Into the wound may be poured, or gently injected, red wine, with honey of roſes, made blood-warm, and outwardly it may be covered with a pledget, ſpread with baſilicon, or any other proper digeſtive; and above that, a compreſs of linen cloth, made into ſeveral folds, bound on with a bandage, and over all a cloth with buckles and ſtraps, to keep his body firm. The ſame method may alſo be obſerved in all wounds that are accompanied with a fever, only the balls above preſcribed need not be given but where there is a great diſcharge of blood, and if the clyſters require to be quickened, that may be done by diſſolving in them a handful of common ſalt.

## *SECT. XXXIII.*

### OF GUN-SHOT WOUNDS AND BURNS.

THESE kind of wounds are diſtinguiſhed by their ſituation, ſize, and figure; ſome are very dangerous, ſome altogether incurable, when they happen to penetrate the brain, or other noble parts; and thoſe which fracture the limbs of a horſe, may alſo be looked on as incurable, ſince a horſe in that condition is able to yield no farther ſervice. Their ſize and figure depend upon the inſtrument wherewith they are inflicted, and alſo render

render the cure more or leſs certain ; for a ſmall wound is more eaſily cured than one that is large; and a wound that is circular and round, made with a bullet, than one which is ragged and toren, ſuch as happens ſometimes by ſplinters, pieces of iron, ſtones, &c. but however they may differ in theſe reſpects, they are all of them accompanied with loſs of ſubſtance, contuſion, and bruiſing of the part; for this reaſon, no wounds made by fire-arms are liable to ſuch great hæmorrhages of blood, as thoſe made by a ſharp and cutting inſtrument.

The firſt intention of the cure of gun-ſhot wounds, is to extract the bullet, or other foreign matter whereby they are made; but that is not always practicable, for bullets are oftentimes lodged within the cavity of the body, and in the thick fleſhy parts, where the bringing of them out is by no means to be attempted; ſometimes, after ſeveral years habitation, they fall more outwards, upon parts of more ſlender ſubſtance, and are caſt out by impoſtumation, or brought away by inciſion. However, the practitioner ought at firſt to make trial, yet not ſo as to tear the fleſh too much; but if his endeavours are to no purpoſe, he ought to make a counter-opening, on the outſide towards the bottom of the wound, where he ſhall perceive any hardneſs (nevertheleſs without touching the large veſſels) and by this means he may draw out the bullet with his fingers, or any convenient

convenient inſtrument; but this method of counter-opening, is the more neceſſary, and the more immediately to be gone about, when pieces of timber, ſtone, iron, or other extraneous bodies lie in the fleſh, as all ſuch things are apt on a ſudden to cauſe very bad ſymptoms, becauſe of their unevenneſs.

The next thing to be done in the cure of gunſhot wounds, is to bring them to a good and laudable digeſtion, that they may caſt off the mortified fleſh; to effectuate which, nothing can be better than the common digeſtive, with a ſmall mixture of oil of roſes poured into it every day; let the wound be alſo often cleanſed with ſpirit of wine, and all the hot and inflamed parts about it bathed with the ſame. When the inflammation is very great, and like to be attended with a fever, a moderate quantity of blood may be taken, laxative clyſters adminiſtered, and a pultice applied of barley-flour, fenugreek-meal, and linſeed-meal, boiled in milk, till it be thick, and a ſufficient quantity of ointment of marſh-mallows, to make it moiſt, adding alſo an ounce of camphor, powdered and diſſolved in ſweet-oil, to every pint-baſon full of the pultice. This may be applied hot twice a day over the inflammation, putting only a very ſoft and ſhort tent into the orifice. But if the large veſſels be wounded, and ſend forth an immoderate flux of blood, in that caſe, the

firſt

firſt dreſſing may be made with a ſoft tent, dipped in a ſolution of the ſtyptic powder deſcribed in the preceding Section; and if the wound penetrates through any member, both orifices muſt be dreſſed alike. If the wound be among the ſinews, or other nervous parts, oil of turpentine, mixed with the common digeſtive, may be applied to it, bathing it now and then with camphorated ſpirit of wine. The cautions laid down in the preceding Section, are alſo to be obſerved with reſpect to bandages and dreſſings, with this farther notice, that no gun-ſhot wound can bear any bandage, but juſt to keep on the dreſſings, until the eſchar and mortified parts are diſcharged.

As to burns, whether they be made with gunpowder, or any other way, they ought in the firſt place to be bathed with ſpirit of wine, camphorated; and afterwards anointed with oil of roſes, St. John's-wort, linſeed-oil, or butter. If the burn be new, the heat and inflammation may be taken off, by applying immediately to the part pounded onions; ſome uſe the juice of onions and verjuice mixed together; black-ſope and common ſalt have the ſame effect; there are others who uſe quick-lime, beat into an ointment with freſh butter; but nothing is better, or ſo ſafe, as the camphorated ſpirits, applying afterwards the following cataplaſm:

Take

Take white lily-roots, three pounds; fenugreek and linſeeds, in powder, of each half a pound; boil the lily-roots and ſeeds very ſoft, and beat them up into a pulp, then add more water, with a few handfuls of bran, and boil it all together into a pultice; to which mix a pint of ſweet-oil, wherein an ounce of camphor has been diſſolved.

If the burn be deep, it muſt be ſcarified with a fleam, and the ſame pultice applied over it to haſten the eſchar or burned parts to a ſeparation. Bleeding and clyſters may be alſo complied with, when there is exceſſive heat, inflammation, &c.

## SECT. XXXIV.

### OF A GANGRENE AND MORTIFICATION.

THIS diſorder is a ſudden, violent, and exceſſive inflammation, with intolerable pain, and is no other than a beginning mortification. The cauſe is ſometimes from an ill habit of body, but commonly from a puncture, from wounds in the tender ſenſible parts, or when ſplinters of bones and other ſharp and pointed matters ſtick into the fleſh or ſinews, or the ill management of any large

wound whatſoever may and often does bring on a gangrene and mortification.

As to the ſigns, beſides the violent and exceſſive pain, the part looks of a deep red, inclinable to purple; whereas in a mortification, there being an abſolute ſtop put to the blood, the part becomes black, ſoft, periſhed, dead, and without ſenſe.

The cure, while it is yet a gangrene, conſiſts chiefly in the application of ſpirituous things, as ſpirit of wine camphorated (viz. an ounce of camphor to every pint of ſpirits) uſed alone, or mixed with ſpirit of ſcurvy-graſs, or ſpirit of turpentine; a fomentation made as follows, will alſo conduce much to the removal of a gangrene:

Take tops of centaury, camomile-flowers, oak-bark in powder, mint, wormwood, and bay-berries, of each a handful; pot-aſh, two ounces; boil them in two gallons of water to one gallon; ſtrain it, and add camphorated ſpirit of wine, two quarts.

Bathe the wound or gangrened part with flannel or woollen cloths dipped in this fomentation; and after they are wrung out, apply the cloths almoſt ſcalding hot to the part; it may be likewiſe waſhed with the fomentation, adding a ſixth part of ſpirit of ſal ammoniac, at the time of uſing it. All things that are proper to promote ſweat are to be

be given inwardly, ſuch as has been preſcribed to remove cheſt-foundering, &c. Notwithſtanding, after theſe means have been made uſe of, and if the gangrene does not give way to them, the practitioner muſt with a fleam or lancet ſcarify to the quick, that the part may be brought to ſuppuration, having in readineſs horſe-dung boiled in ale or wine, to be applied hot as a pultice, and as ſoon as the wounds come to matter, they may be dreſſed with Ægyptiacum made hot; and if there be ſtill a very great foulneſs, and tendency to a mortification, the ointment may be mixed with butter of antimony, which is a very powerful remedy; or with every ounce of Ægyptiacum, may be mixed ſix drops of aquafortis; Solleyſell adviſes lime-water; when that proves not efficacious enough, he recommends the following, viz.

Take crude alum, one pound; German copperas, groſsly beaten, half a pound; verdegris, in powder, three ounces. Boil all together in a gallon of vinegar, to the conſumption of one half; then without ſtraining the liquor, reſerve it for uſe in a glaſs phial. And if this be too weak, he adviſes two ounces of aquafortis to be added to each quart, ſhaking them well together.

This was the preſcription that Mr. Geſſier, the quack-ſurgeon, challanged the Surgeons' Com-

pany ſo often about, in his advertiſments, to ſtop mortifications with in the human ſpecies.

This liquor is to be made hot, and the part to be dreſſed with pledgets of tow dipped in it.

In all large mortifications the practitioner muſt, with a ſharp inſtrument, cut and extirpate the dead fleſh, taking care not to hurt any of the ſinews that are ſound or recoverable, either with his inſtrument or applications. Let his applications to them conſiſt chiefly of ſuch things as are ſpirituous; dreſſings with honey of roſes, beat up with the yelk of an egg, with a fourth part of camphorated ſpirit of wine, and afterwards all ſuch things as are cleanſing and proper to promote a laudable growth of new fleſh.

## *SECT. XXXV.*

### OF THE BITE OF VENOMOUS BEASTS.

SUCH wounds as are made by the biting of venomous beaſts are frequently mortal, for the poiſon communicated to the blood, cauſes in it ſo ſpeedy a rarefaction, that the whole animal frame is put into an immediate diſorder, the wounded part becomes ſwelled, inflamed, of a livid colour, and its progreſs much more ſudden than any gangrene, proceeding from whatſoever other

other cauſe. The biting of a mad enraged dog is not ſo poiſonous as is generally ſuppoſed, but only as thoſe creatures are apt to ſtrike their jaws with great force, whereby they ſometimes wound and bruiſe the ſinews and nervous parts.

The bite of an adder is plainly venomous and deadly, from many inſtances, both among men and brutes; and the bites of thoſe animals are generally followed with a drop or two of greeniſh matter, which by its corroſive quality, poiſons the wound, and infects the body.

There are infinite ways of curing thoſe bites, ſome uſe the actual cautery immediately; and ſome cut out the part that is bit; but theſe operations cannot be allowed of in all parts, but chiefly when the wound is made in the fleſh, and free from the nerves and ſinews; others only apply garlic, onions, bay-ſalt, and bacon, ſtamped together into an ointment; others uſe ſtamped rue, muſtard-ſeed, pickled-herrings, and black-ſope, with a ſufficient quantity of deer-ſuet or bears-greaſe; and there are ſome who only lay over the wound Venice treacle, or mithridate, which are very good, eſpecially if the ſpirituous embrocations, directed in the preceding Section, be alſo complied with and uſed often. The viper-catchers, who are often bit with adders, cure themſelves by anointing the wound immediately with adders-fat, which they always keep in readineſs in a gallipot, the certainty of which cure has been

been evinced by the experiments of a great and eminent phyſician, made upon dogs; who very reaſonably aſcribes the healing virtues of that fat, to its clammy and viſcid parts, but eſpecially as it is more penetrating and active than other oily ſubſtances, whereby he ſuppoſes it to involve, and as it were ſheath, the volatile ſalts of the venom, which are the inſtruments of theſe deadly miſchiefs that attend the biting of ſuch animals; and for the ſame reaſons, the vipers-fat or greaſe may no doubt be of ſervice in all other bites or envenomed wounds.

When the poiſon has once got into the maſs of blood, the chief part of the cure muſt be owing to inward means, which ought conſtantly to be uſed, at the ſame time proper applications are to be made outwardly. Solleyſell recommends the tincture and eſſence of vipers, which indeed is not improper, only that their ſcarcity makes thoſe preparations very dear in our country; however, to a horſe of great value, a doſe of two or three ounces of the powder of dried adders might be given in two ounces of adder's oil, mixed in a pint of canary, and repeated ſeveral times; as ſoon as the malignity and venom is deſtroyed, the ſores may be treated as other wounds or ulcers.

SECT.

## SECT. XXXVI.

### OF ULCERS.

SORES of a malignant quality, ſo as to hinder the re-union of the parts, are termed *ulcers*; theſe are diſtinguiſhed according to their ſize, ſituation, or degree of malignity; ſome are ſuperficial, and only appear on outward parts; others are deep, and are therefore termed *cavernous* or *fiſtulous*, which names are borrowed from their figure.

The ſuperficial ulcers are many, and attended with divers qualities; ſome being ſoft and cruſty, ſending forth a viſcid matter of a cadaverous and carrion-like ſmell, from whence they are alſo called *putrid*; others have fungous and hard excreſcences appearing in different aſpects; and ſcirrhous edges, which in horſes are very thick, having their bottom of a livid or duſkiſh colour; full of little papillæ and unevenneſs. The cavernous and fiſtulous are alſo diſtinguiſhed from each other; the cavernous being deep and broad at bottom, full of little holes, with a ſmall and narrow orifice, from whence there continually iſſues a virulent corroſive matter; whereas the fiſtulous ulcers have long, ſtreight, and deep holes, which ſometimes communicate with one another like a rabbit-

rabbit burrow, their ſides callous and hard, and the matter ſometimes corroſive, ſometimes not. There are other ſorts of ulcers taken notice of by the writers of ſurgery, as the cancerous, corroſive, &c. the firſt is ſeldom or never to be ſeen in brutes, and the laſt ſeems not to be a proper name of diſtinction for any particular kind of ulcer, that being an evil quality which is more or leſs to be met with in moſt ulcers, and by which they may be looked upon to be more or leſs malignant.

Ulcers are alſo diſtinguiſhed with reſpect to their cauſes, whence ſome are called *primitive* and others *degenerate*; it is ſufficient for the underſtanding this matter, to know that all ulcers take their origin immediately from wounds, bruiſes, tumours, or other eruptions and breakings out of the ſkin; ſome of which turn ulcers by ill management, and others from a vicious diſpoſition in the blood.

As to the ſigns, they are manifeſt from what has been already ſaid of their ſeveral kinds, we ſhall therefore make ſome few obſervations concerning their prognoſtics:

Firſt, an ulcer that is ſuperficial, is leſs dangerous than one that is deep, as it may for the moſt part be cured by manual operation, with the aſſiſtance of proper applications; neither need we acquaint

acquaint any one that a ſmall ulcer is more eaſily managed than one that is large.

Secondly, an ulcer proceeding from a malignity in the blood, &c. whether it be large or ſmall, ſuperficial or deep, is more dangerous than one which is only degenerate, and not attended with ſuch bad circumſtances.

Thirdly, as a degenerate ulcer may, by long continuance, create an evil diſpoſition in the blood, by hurting the common and ordinary ſecretions, and inducing an ill habit, it may therefore be as dangerous and bad to cure as any; for a ſudden and injudicious cure of ſuch an ulcer, is often the cauſe of ſome other diſeaſe.

Fourthly, ulcers that are formed of abſceſſes in the hips, loins, thick part of the ſhoulders, under the blade-bone, and in the joints, and have communication with the bones, as theſe lie out of reach, they are therefore very difficult and hard to be cured; and if the cavities of ſuch abſtruſe ulcers be large, they will ſoon bring the body of a horſe into a waſte.

Fifthly, ulcers in the dependent parts, as thoſe of the legs, are very obſtinate, as they become the ſink and drain of all the humours, but eſpecially as the matter proceeding from the tendons, &c. creates a very ill diſpoſition in them.

Laſtly, all ulcers in the lungs, kidneys, liver, and other inward parts, generally prove mortal

ſooner or later, according as they are ſituated nearer or at a diſtance from the larger veſſels; and according to the other circumſtances that may attend them.

We have already taken ſufficient notice of thoſe kinds of ulcers, where we have treated of broken-winded and conſumptive caſes, of hectic fevers, &c. having recommended for their cure the uſe of cleanſing, healing, and balſamic medicines inwardly, with a proper regulation in their feeding and exerciſe.

As to outward and ſuperficial ulcers, with their different accidents, they have alſo been ſufficiently handled in a former Section, both as to externals and internals. The ulcers of ſome particular parts have likewiſe been taken notice of, as the glanders, &c. Thoſe of the legs, feet, and other dependent parts, ſhall be treated of when we come to the diſeaſes of thoſe parts. It remains therefore that we put a period to this ſubject, by laying down ſome directions concerning the cure of thoſe ulcers that are termed *cavernous* and *fiſtulous*, and likewiſe ſuch of them as are abſtruſe, and form themſelves into ſeveral meanders and hidden abſceſſes among the bones and fleſhy interſtices; though in the latter circumſtances, we can give the practitioner but little hopes of ſucceſs, for the reaſons already alledged, yet ſo long

as

as a horſe continues ſerviceable, the proper means ought to be uſed.

Therefore whether ſuch an ulcer proceeds from an old deep wound, or any other cauſe, the chief thing to be done is now and then to inject proper liquors into it, forbearing the uſe of thoſe things that are very corroſive; for though corroſive applications are ſometimes proper in ulcers that are ſuperficial, and where the eſchar can be brought off by the proper dreſſings, or the help of an inſtrument, and where a freſh growth of ſuperfluous matter can be ſuppreſſed by bandage; yet, in the caſe now before us, they are often hurtful, as all ſuch applications cauſe accidents that ought to be remedied by art, and ought therefore to be within the reach of the artiſt; for which cauſe, the propereſt liquors to be injected into all ſuch ulcers, are decoctions made of the roots of briony, birthwort, flower-de-luce, &c. with a third part of ſpirit of wine; rectified oil of turpentine, common honey, or honey of roſes, may alſo be made uſe of in the ſame intention; and when there is a foulneſs in the bones, which may be known by the thinneſs, oilineſs, and ſtench of the matter, in that caſe, a tincture drawn with wine from myrrh, aloes, frankincenſe, olibanum, ſaffron, cinnamon, and ſuch like things, will make a very proper injection to be uſed ſometimes. To the wound may

be applied pledgets of tow, dipped in the ſame liquor, or ſome good digeſtive, and over the dreſſing a ſticking-plaſter. The injections ſhould always be made warm, and when the part will admit of firm bandage, it will never fail to be of ſervice.

But thoſe ulcers which upon the trial with the probe, &c. are found to be within the reach of an operation, they then ought to be laid open, avoiding, as much as poſſible an effuſion of blood, by dividing the large veſſels; and the inconveniencies that may happen by cutting the nervous and ſenſible parts. After inciſion, any ſuch ulcer is to be treated as a freſh wound; only, that inſtead of a re-union, by cloſing the ſides again, they muſt be kept open with doſſils of tow dipped in ſtyptic-water the firſt dreſſing, and afterwards in a digeſtive, ſuch as baſilicon, or the like, that nature may fill up the whole ſpace with a growth of new fleſh. If there be ſtill a bad ulcerous diſpoſition in the part, cleanſing ointments, as baſilicon mixed with red precipitate, Ægyptiacum, or, if neceſſary, ſtronger corroſives may be made uſe of, as copperas-water, lime-water, a ſolution of blue-vitriol, or any of thoſe directed in other parts of this treatiſe, in the like intentions, may alſo be complied with to waſh the ſore; if the bones be foul, the callous ſides muſt be ſcarified, or touched with a cauſtic, to bring them even and ſmooth. The

horſe

horſe may alſo be purged once or twice, and afterwards go under a courſe of the antimonial or cinnabar alterative balls, &c.

## SECT. XXXVII.

### OF CAUTERIZING AND GIVING THE FIRE.

CAUTERIZING is performed by an inſtrument made hot, or by corroſive and burning medicines, and theſe are either natural or artificial, which may be made ſtronger or weaker, according to the ſeveral intentions in which they are uſed. The firſt is called the *actual cautery*, and the laſt the *potential*.

We make uſe of corroſive and burning medicines to cleanſe and deſtroy all foulneſs which obſtructs and hinders the cure of an ulcer, to keep down a preternatural growth of fungous fleſh, to eat away excreſcences, to open abſceſſes and impoſtumes, moreover to ſtop up the mouths of blood-veſſels, and thereby to prevent an hæmorrhage of blood. The actual cautery is alſo made uſe of to moſt of the ſame purpoſes; but as we have taken notice of theſe things already, and reduced them to practice, with the neceſſary cautions in their applications, we ſhall not therefore

ſpend

ſpend the reader's time in repeating them, but proceed to the other intentions of cauterizing, which in a more eſpecial manner go under the denomination of *giving the fire.*

The fire is ſo ancient in the practice of ſurgery, that it ſeems to be one of the firſt methods uſed to remove pains in the joints, &c. proceeding from cold glutinous humours impacted in them, as may be learned from Hippocrates and others; and though it be now greatly in diſuſe among us in theſe intentions, yet it is to this day very much practiſed by the Egyptians and Arabs, and it is reported of the Moors and other Barbarians, that they ſeared their arms and ſhoulders, only to ſtrengthen them to draw the bow. The ancient method was of burning flax or cotton under the diſeaſed member, made into a pyramidal form, that the part might be inured to it by degrees, and ſo enabled to bear a neceſſary augmentation of the flame. And Sir William Temple had ſeen ſuch good effects from it, that it encouraged him to write his Eſſay concerning the Cure of the Gout by *Moxa*, which is only a kind of cotton ſet on fire in this manner.

Whatever approbation may be given to this method of curing diſeaſes in the human body, it is certain the effects of fire are very extraordinary

with

with regard to horſes, in old diſeaſes in the joints, ſinews, and nervous parts, after they have bid defiance to all artificial compoſitions whatever; neither will this be thought ſtrange, if it be conſidered that thoſe parts are very compact and ſolid, being compoſed of an infinite number of fibres and nervous threads, laid ſo cloſe together, that there is not a cavity or interſtice to be diſcerned in them when cut aſunder; and therefore, when theſe are obſtructed, nothing can be ſuppoſed to relieve them but what is of the moſt powerful efficacy.

Therefore it is very plain that actual fire may be of the greateſt importance in removing obſtructions, and that is in two reſpects.

Firſt, as by cauterizing and burning the outſide there is a diſcharge made, and of conſequence a derivation of matter from the obſtructed part, which muſt give more liberty to the incloſed fluid.

Secondly, as the heat communicated in this manner, by the active particles of fire, muſt needs give a kind of new life and motion to the viſcid juices which are thus impacted, whereby they become more fitted to make their way through their proper vents and paſſages, and likewiſe as it forces the relaxed fibres to contract themſelves.

This is ſo certain an effect of fire, that it is even plain in thoſe inſtances where many of the poorer

poorer ſort among the country people cure themſelves of the kibes, &c. by holding their heels over burning coals, or a hot pair of tongs, though they do not ſear the ſkin; and many of the good effects which proceed from the application of ointments to hard obſtinate ſwellings, and aching pains in horſes, are more owing to the hot bar of iron made uſe of in the rubbing in of the ointments themſelves, ſeveral of theſe being no better than common hogs-lard.

And as the fire becomes thus uſeful in all ſuch intentions, by removing ſettled obſtructions, ſo it is of no leſs importance in ring-bones, quitter-bones, and, in fine, to looſen all griſtly and horny excreſcences that grow out upon the legs and feet, or any other part of the body; where by ſearing their ſubſtance and piercing the ſkin near their root or inſertion, a ſtop is put to the humours that nouriſh them, ſo that they are made to rot and fall off.

Solleyſell lays down three important directions in giving the fire.

Firſt, not to preſs too hard upon the part.

Secondly, to let the knife be red-hot, but not flaming.

Thirdly, to heat the knife or inſtrument in a charcoal fire.

The two firſt of theſe directions are abſolutely neceſſary, but the laſt may be complied with according to the artiſts conveniency.

In

In all diſorders of the ſinews and nervous parts, the fire is to be very ſparingly given, and a drawing-knife is certainly the moſt proper inſtrument; though there are ſome who make uſe of a large gold coin, from a conceit of its having greater medicinal virtues than really belong to it; ſome content themſelves with ſilver, and there are others who prefer copper, from an opinion of its being a metal that reſiſts putrefaction, and among theſe is our laſt-mentioned author. Moſt of our Engliſh farriers make uſe of iron inſtruments in all their cauterizing operations, which, if they be ſmooth and well poliſhed, are as good as any; and in this it is ſufficient that they have the example of moſt ſurgeons for their authority.

The knife ſhould be round on the edge, and pretty thick, as it may keep the heat as long as poſſible; it ought alſo to be heated in a very clear fire (if a charcoal fire cannot be had) and afterwards well rubbed upon a linen cloth, that no dirt or aſhes may ſtick to it, and until the flaming redneſs is wore quite off; then the farrier muſt, with a ſteady, dexterous, and light hand, draw his lines or raſes on each ſide the joint or ſinew, following the courſe of the hair, without making croſs lines; for beſides that they are of no importance in the cure, they cauſe a very great deformity. Due care muſt alſo be had never to pierce the ſkin, but rather repeat the ſtrokes the oftener, until it becomes of a pale cherry-colour; if the fire

happens to touch the ſinews, it will be apt to cauſe convulſions, and if the horſe ſhould even ſurvive theſe diſorders, he may hereafter become irrecoverably lame.

When the grievance happens to be on the hips, ſhoulders, or other fleſhy parts, or when the fire is given to diſperſe any obſtinate phlegmatic humour that cannot be brought to ſuppuration, the artiſt may go on with ſome boldneſs; beſides that, the lines may be made of any figure, either in ſhape of a palm, arrow, ſhield, or what the farrier pleaſes; the ſkin ought alſo to be pierced more or leſs, according to the ſituation and urgency of the diſeaſe, that a powerful revulſion may be made by drawing away a plentiful deal of matter. There are many inſtances of cures of this kind to be met with among horſes, and even ſome in human bodies, where by burning the hip with a hot iron, the iſchiatic pains, and other nervous obſtructions, have been altogether removed. In caſes where the ſkin is to be pierced, it ought to be done from below upwards, that the matter may flow downwards, the better to prevent an ulcerous diſpoſition in the ſores; and into the orifice or holes may be introduced little ſoft tents of tow, dipped in warm baſilicon, or any other ſuppurative ointment; for if theſe be crammed with hard tents, the anguiſh that muſt neceſſarily happen, after giving the fire, will be apt to create a fever.

All

All the ſeared and burnt parts ought immediately to be bathed in ſpirit of wine, and afterwards a mixture of bees-wax and oil melted together, or with common tar, until the eſchars fall off; but if there be a very great anguiſh, and a tendency to a ſwelling, which is very apt to fall upon the legs, eſpecially of thoſe horſes that are tender and waſhy, in that caſe camphorated ſpirits may be uſed two or three times a day, and, if need require, the cataplaſm directed for the cure of burns. Theſe accidents may in a great meaſure be prevented, and the whole intention more effectually anſwered, if, before the operation, recourſe be had to fomentations and baths, or attenuating oils, ſuch as the oil of earth-worms, or the ſoldiers' ointment; for by theſe means, the grievance will more eaſily yield to the impreſſions of the fire, and the burnt parts come ſooner to a ſuppuration.

We need not acquaint any one, that the horſe muſt be ſecured with collars, or ſuch contrivances as can be made effectual to prevent his licking, biting, or rubbing the ſcabs, which is very common when they begin to heal; otherwiſe it will cauſe a great deformity, and ſuch an one as cannot be eaſily remedied. What relates to the the firing of ring-bones, quitter-bones, ſcratches, &c. ſhall be treated of in their proper places.

## SECT. XXXVIII.

### OF ROWELLING.

BY rowelling is meant an artificial vent made to diſcharge noxious humours; but the effects of rowelling are not the draining away of ill humours, as moſt people believe, for the matter that proceeds from the rowel is formed of the blood, ſo that by it both the good and the bad are evacuated. Therefore all that can be propoſed by rowelling, is to make a revulſion or diverſion from any part that is weakened or relaxed by old obſtinate obſtructions; and in this ſenſe, it is uſeful in many of the ſame intentions as the fire, and is very profitable in all achs, cold phlegmatic ſwellings, and even ſometimes in lameneſs and infirmities of the legs. It is alſo a relief where there is a fulneſs and redundancy of humours, and in moſt diſeaſes of the eyes; but rowelling is abſolutely hurtful to horſes that are poor, lean, and hide-bound, or to thoſe that are hectic, conſumptive, &c. There are two ſorts of rowels, viz. a hair-rowel, and a French-rowel; the one is what ſurgeons call a *ſeton*, and the other a *fonticle* or *fontanel*, but the fonticle or French-rowel is by many preferred, as it is not ſo apt to cauſe an abſceſs, and is therefore more eaſily dried up; but in caſes

caſes that require a conſiderable diſcharge of matter, a ſmall abſceſs is not to be altogether feared, becauſe ſuch an one as happens upon rowelling, may be eaſily enough cured by the application of bolſters and a tight bandage.

We need not lay down any particular directions concerning this operation, ſince it is ſo common that even every country ſmith can perform it. We ſhall only take notice that the French-rowel ought always to be put in the interſtice or furrow that goes between the muſcles, either towards their origin, inſertion, or any other part throughout the whole tract of any interſtice; but to prevent a too great abſceſs, the hair-rowel may be better placed towards the lower part of the interſtice, where the furrow is not ſo deep, that the matter may eaſily run off; but care ought to be taken not to put in the rowel too near the tendons, but where there is ſome ſubſtance of fleſh, and if rowelling at all is neceſſary, two or three at leaſt are little enough to do any good.

SECT.

## SECT. XXXIX.

### OF GELDING AND CURTAILING OF HORSES.

THE gelding of a foal is an eaſy operation, and ſeldom attended with any ill accidents; but if a horſe's teſticles ſhould be bruiſed or otherwiſe hurt, and ſo become irrecoverable, the extirpating of them will require the ſkill of a good artiſt.

The horſe being firſt laid on ſome ſoft place, the ſcrotum or outward caſe is to be cut open on each ſide, when both teſticles are to be taken away; and where there is but one, on that ſide where the diſeaſed teſticle lies. Afterwards tie a waxed thread round the ſtrings, to ſtop the blood, and with a pair of ſharp ſciſſars or knife cut the ſtrings between the ligature and the teſticle, applying to the wound pledgets dipped in the common digeſtive, mixed with ſpirit of wine and camphor, laying over all compreſſes and a bandage.

If an inflammation happens, it is to be treated with warm fomentations and ſpirituous things, and the horſe kept to an opening diet, with barley-water for his drink.

This is a more ſafe method than what is generally practiſed, viz. by applying the actual cautery and then filling the place with ſalt, for though it

may

may ſucceed with a colt or foal, while the ſpermatic veſſels are very ſmall, yet it muſt needs expoſe a horſe to many accidents when he is come to maturity.

As to the curtailing or docking of horſes, all that we intend upon the ſubject is only to adviſe the farrier that his ſearing-iron ſhould be ſmoother and better poliſhed than what are generally made uſe of, and that it ſhould be rubbed very clean on a woollen cloth; for when it is otherwiſe, the ſcoria or ſparks that fly off from the iron are apt to cauſe an intolerable anguiſh, which falls down into the fundament and ſheath; neither ſhould the iron be at any time applied flaming hot, or elſe it will bring the burnt part along with it; for want of this laſt caution, we have ſeen the iron uſed two or three timesbefore an eſchar could be formed, which is always of bad conſequence, as it muſt be a conſiderable time before the bone is covered.

## *SECT. XL.*

### OF THE LAMPAS.

THIS diſorder is an excreſcence in the roof of the mouth, which hinders a horſe from feeding, and happens uſually to young horſes. It

It is cured by applying a hot iron made for that purpoſe, and is ſucceſsfully performed in all parts of the kingdom; ſo that there is no need of any caution, only that the farrier do not penetrate too deep, ſo as to ſcale the bone that lies under the upper bars, for that would be attended with very troubleſome and dangerous ſymptoms.

## *SECT. XLI.*

### OF THE BARBS.

THESE are ſmall excreſcences under the tongue, which may be ſeen by drawing the tongue aſide, and are conſtantly cured by cutting them off, as cloſe as may be, with a pair of ſciſſars, and rubbing the place with ſalt.

## *SECT. XLII.*

### OF THE TICK.

SOMETIMES we find this among the diſeaſes of horſes, yet it is, by the beſt judges, looked upon to be an ill habit rather than a diſeaſe, which may probably at firſt proceed from the pain and itching that happens in the breeding of teeth. There are divers methods uſed to break a horſe of

of this habit, but the moſt approved is, to make him eat in a place where there is no manger, tying him with a buckle to the wall, and giving him his oats in a haverſack.

## SECT. XLIII.

### OF WOLVES-TEETH.

THIS happens to horſes in the decline of their age; when the gums are woren down, the grinders do not meet one upon another, but grow either outwards or inwards, ſo that their points prick the gums or tongue, and hinder a horſe's feeding. The uſual method of cure is, to open the horſe's mouth with the upſet, and with a chiſſel and mallet ſtrike off thoſe ſharp edges, and afterwards file them down ſmooth; but it is much ſafer to make uſe of a well-tempered file, though it will take up a little more time.

## SECT. XLIV.

### OF GIGS, BLADDERS, AND OTHER DISEASES OF THE MOUTH.

THE mouths of horſes are ſubject to ſeveral infirmities, which by reaſon of the ſoftneſs and ſpongineſs of the parts, are often troubleſome,

and cannot be eaſily removed without the fire, or ſome corroſive medicine. The gigs and bladders for the moſt part grow out on the inſide of the lips, and ſometimes towards the palate, but thoſe of the lips are the largeſt. The uſual method of cure is, by ſlitting them open, and diſcharging the matter, afterwards waſhing them with ſalt and vinegar. Sometimes a horſe is wounded by a ruſty bit, and by ſeveral other accidents; all which, either from neglect or an ill diſpoſition in the blood, will create thoſe ſort of ulcers the farriers call *cankers*. In ſuch caſes, the beſt way is to make uſe of a ſmall round ſearing-iron, moderately heated, which may be introduced through a braſs pipe to defend it from touching any other part; and when the eſchar falls off, it may be touched now and then with a ſponge dipped in copperas-water until it is cured.

The falling down of the palate, or, more properly, the relaxation and ſwelling of the uvula, is alſo a diſeaſe to which horſes are ſubject upon catching cold; though we do not find it much taken notice of by many farriers. The cure is by blowing pepper upon it, or touching it with a feather dipped in the blue eye-water, or ſpirit of ſal ammoniac, &c.

SECT.

## SECT. XLV.

### OF THE POLL-EVIL.

THIS is an impoſtume, and ariſes on the poll, and, for the moſt part, is cauſed by the fretting of a new halter, collar, &c. At firſt it requires no other method of cure than what is common to other boils, inflamed tumours, &c. by ripening it and bringing it to matter, but ſometimes it degenerates to a ſinous ulcer, though that be generally owing to want of ſkill.

There is a ſmall ſinus under the noll-bone, where the matter is apt to lodge, unleſs care be taken to keep the part firm with bandage; but inſtead of that, the farriers generally thruſt in a long tent, which raiſes the fleſh, and opens a way into the ſinus, and by this means an ulcer is created where there needs be none; all therefore that is farther neceſſary on this head, is to caution the practitioner againſt ſuch ill methods, and if the tumour has a very large cavity within it, it is much better to lay it ſomewhat open, than to thruſt a foreign ſubſtance into it; and if it acquires an ulcerous diſpoſition, it muſt be treated as ſuch. See the cure of tumours upon the glands in the Section of the Strangles.

## SECT. XLVI.

### OF HURTS AND BRUISES IN THE WITHERS, &c.

HORSES are very often hurt or wrung in the withers by the biting of other horſes, or unfit ſaddles, eſpecially when the bows are too wide, for by that means they bruiſe the fleſh againſt the ſecond and third vertebræ of the back, which form that prominence that riſes about the ſhoulders; when the ſwelling is moderate the uſual method is, to waſh the part with ſalt and water, or to apply horſe-dung, or ſalt and black-ſope mixed together, which very often ſucceeds; any reſtringent charge, as bole and vinegar with whites of eggs, has the ſame effect, though in a different manner; as alſo the whites of eggs beat up into a foam with a piece of alum; this is very much commended. Sometimes the hair is rubbed off, and the part becomes galled, in which caſe nothing is preferable to rectified ſpirit of wine, or brandy, which ought to be uſed often, covering the part with a linen cloth dipped in bees-wax and a little oil, melted together, to keep the dirt from it, and defend it from the air. But when the bruiſe happens to be violent, an impoſtumation may certainly be expected, which muſt be

be managed according to the directions laid down in the cure of the Strangles. And as ſoon as the matter is diſcharged, and the ſwelling fallen, ſo that the part can bear to be bound, a ſtrap may be fixed to the breaſt-cloth, which may paſs between his fore-legs, and be faſtened to his ſurſingle, which in a great meaſure will anſwer the end of bandage, by keeping the parts firm.

Solleyſell complains of the ill accidents attending the diſorders in the withers, and it is no wonder; for that author was always too buſy with tents, and but little acquainted with the true uſage of bandage. A tent in the withers is very dangerous, and in all parts of the back and loins, for by them the fleſh is raiſed, as was obſerved in the preceding Section, and the matter becomes collected among the ſpines, whereby ſinous and fiſtulous ulcers are formed, which for the moſt part prove incurable.

As to thoſe ailments that proceed from the bite of another horſe, whether it be on the withers, the neck, or any other part of the body, they muſt be often bathed with ſpirit of wine; and dreſſed with turpentine and the yelks of eggs, as all other wounds or impoſtumes, and if the bruiſe cauſe a ſmall mortification and deadneſs in the part, which ſometimes happens, it may be dreſſed with Ægyptiacum; and if it proves obſtinate, the actual cautery may be made uſe of to bring it

to

to digeſtion, after which it may be managed as a ſimple wound or ulcer.

## *SECT. XLVII.*

### OF A NAVEL-GALL, &c.

THIS is ſeated on the top of the ſpine, oppoſite to the navel, from whence it has its name, and is generally cauſed by a bad ſaddle pinching a horſe behind, which being neglected, turns to a foul fungous excreſcence, and ſometimes after a long continuance to a ſinous and fiſtulous ulcer; ſometimes it looks like a hardened brown jelly, and ſometimes black and mortified. While there is moiſture and ſenſibility in the part, an ointment may be applied of quickſilver and turpentine, viz. an ounce of quickſilver to every two ounces of turpentine, rubbed in a mortar till they be well incorporated, and then ſpread upon hurds or flax on each ſide of the ſpine; over the ſwelling may be laid ſmooth dry pledgets of hurds, or bolſters of flaxen cloth, which may be girt round with a ſurſingle. But if the ſore be dead and lifeleſs, a good ſharp razor or knife may be made uſe of to cut it to the quick, and then let it be

be dreſſed according to the directions laid down in the cure of wounds, &c.

A ſitfaſt proceeds alſo from a ſaddle-gall, and is another of the accidents that happen to the ſpine; it is dry and horny, and may be cured by anointing it firſt with oil of bays until it grows ſoft, and then by dreſſing it with quickſilver and turpentine, as before directed, which alone will make a cure, eſpecially if the horny ſubſtance be gently ſcarified in ſome places.

## *SECT. XLVIII.*

### OF A SHOULDER-WRENCH, SHOULDER-PIGHT, AND SHOULDER-SPLAIT.

TO underſtand the nature of theſe infirmities, it will be neceſſary to remember that the blade-bone of the ſhoulder is fixed to the body, not by articulation or jointing, but by appoſition, being laid to the ribs, and faſtened by the muſcles which lie under and above it; ſo when a horſe happens to receive a blow or ſtrain in the ſhoulder, the tendons of thoſe muſcles are ſtretched and relaxed, and when that is violent, it is called a *ſhoulder-ſplait*, and becomes more or leſs hardy.

Every

Every one ſufficiently knows that a ſlip, falſe-ſtep, or any undue poſition of a horſe's leg, will ſtrain and weaken the ſhoulder, by ſtretching thoſe ligaments; and ſometimes the ſhoulder is affected by a hurt or bruiſe on the withers; the reaſon of which may be eaſily enough conceived by any one who will examine into the ſtructure of theſe parts; but when the accident proves not ſo violent as to ſhew a looſeneſs and ſwelling, it is not eaſily diſcerned whether the lameneſs be in the ſhoulder, foot, or any other joint. The beſt judges have therefore in all ſuch caſes, thought it proper to examine all parts from the ſhoulder downwards, and even to unſhoe the horſe, that they may know certainly where to apply their remedies. But the infirmities of the ſhoulder may be diſtinguiſhed from thoſe of the feet, by having a horſe put to exerciſe; for if the lameneſs be in the feet, he will halt moſt when he is ridden; but if it be in the ſhoulder, the warmer he grows the leſs he will halt; and if the wrench be violent, he will be apt to caſt his leg outwards, forming a circle as he goes. But if none of theſe ſigns appear in his gait, the ſureſt way is to turn him ſhort on the lame ſide, for that tries the muſcles the moſt of any thing, ſo that if it be in his ſhoulder, he will ſet his foot on the ground warily, and endeavour to favour it.

In

In order to the cure, a diſtinction ought to be made between an old lameneſs and a hurt that is newly received; for in a freſh ſtrain, the firſt intention is to apply ſuch things as are proper to allay the heat and inflammation, and prevent a too great afflux of matter to the part; whereas, in an old lameneſs, thoſe things are chiefly made uſe of, that attenuate and render the ſuperfluous humours fit to paſs through the pores; and therefore as ſoon as you perceive your horſe lamed in the ſhoulder, by a fall or any other accident, after he has been bled on the oppoſite ſide, a cold reſtringent charge may be applied of vinegar, bole, extract of ſaturn, and the whites of eggs. Verjuice may be uſed inſtead of vinegar, on the road, which may be had at any farm-houſe, for the ſooner a cold application is made the better. The part ought, in the beginning, to be refreſhed three or four times a day with a ſponge dipped in vinegar and bole, after that the following plaſter may be applied:

Take of dragons-blood, in powder, two ounces; Burgundy pitch, four ounces; roſin, three ounces; melt the pitch and roſin together, then ſtir in the dragons-blood.

Spread this upon the horſe's ſhoulder before it grows cold, and put fine flocks of the colour of the horſe all over it.

When the lameneſs happens to be of an old ſtanding, the following oils will be of great ſervice :

Take train oil, two pounds; oil of vitriol, two ounces; mix them carefully together, then add a pint of the ſtrongeſt ſpirit of wine and camphor, and four ounces of oil of turpentine.

Some of this compoſition may be rubbed very well into the place affected two or three times a day; and though it is not the moſt elegant or deareſt preparation, yet it will be found much more effectual than thoſe oils which are twenty times as coſtly.

Solleyſell recommends the ointment of Montpellier as an excellent remedy in all ſtrains in the ſhoulders, &c. It is compoſed of the ointment of roſes, marſh-mallows, pepleon, and honey, of each equal quantities. The oils of turpentine, earth-worms, petre, St. John's-wort, and nerve oil, bears-greaſe, horſe-greaſe, mules-greaſe, deer-ſuet, badgers-greaſe, and many ſuch things, are alſo uſed in the ſame intention. But if the lameneſs does not yield to theſe things, recourſe may be

be had to rowelling, or to the fire, but the laſt is preferable, and leſs painful than the uſual method of rowelling, by bruiſing and blowing up the ſhoulder.

Therefore with a hot iron make a circle the breadth of a trencher round the joint, and within the whole circle pierce the ſhin, leaving about an inch between the holes, and to each apply yellow wax and roſin melted together, until the eſchars fall off, and then dreſs them every day with turpentine and honey, applying plaſters as directed until the ſores are dried up.

Some adviſe ſwimming a horſe for a ſhoulder-ſplait, from an opinion of the joint being out, but if it was really ſo, he muſt ſwim with three legs, which is almoſt as impoſſible as for a door to move without hinges. Yet ſwimming is not always unſucceſsful, and in all old lameneſſes it becomes ſerviceable, in the ſame manner as a cold-bath, by helping perſpiration, and giving a more lively motion to the obſtructed matter, and therefore the morning is the moſt proper time, becauſe the water is then the coldeſt, and it ſhould be a continued cuſtom for ſome time to do effectual ſervice.

In all reſpects the horſe ſhould be put to no kind of labour, neither ought any one to ride him, for a weight upon his back muſt needs add to the infirmity, as the greateſt ſtreſs lies upon the

ſhoulders; it will be very proper for him to be walked out every day, when the weather is favourable, and his exerciſe may be increaſed as his ſhoulder recovers ſtrength, but no patten ſhoes to be made uſe of.

## *SECT. XLIX.*

### OF A SWAYED BACK, AND STRAINS OF THE HIPS.

THIS diſeaſe is a pain and weakneſs in the reins, cauſed by a fall, carrying of ſome heavy burthen, or ſome other violent accident, and ſometimes the horſe is alſo hurt inwardly, which brings him into the greateſt diſorder imaginable. We think there is no ſuch thing as a broken back, in the ſenſe farriers generally mean, otherwiſe the horſe could not ſurvive it many minutes; neither is it very probable that the ſpines or proceſſes of the vertebræ or back-bone ſhould be often broke, unleſs the horſe be very poor and lean; theſe things, for the moſt part, are very well guarded by the thick muſcles of the back, and therefore, by a ſwaying of the back, is properly to be underſtood a ſtretching and relaxation of the muſcles and ligaments of thoſe parts; and when the hurt is more inward, the diſorder muſt then conſiſt in the ſtretching of the large blood-veſſels,

veſſels, &c. but in all ſuch caſes the farrier ought, in his cure, to treat a horſe as if he was hurt both inwardly and outwardly, as there is a conſtant ſympathy between both.

The firſt thing therefore to be done is, take a plentiful deal of blood from the neck, after which the cold charge and the other remedies preſcribed in the preceding Section ought to be applied; inwardly thoſe things that are proper to promote ſweat, ſuch as ſweating in a dunghill, if the common remedies fail; his diet muſt be opening, and all imaginable care taken to keep down a fever. He ought to be girt pretty firm over his reins, yet not ſo as to hinder the motion of his flanks; he ought alſo to be hung up or kept in a ſteady poſture; but if the weakneſs continues, you may proceed to give the fire, which muſt be done by piercing the ſkin on the muſcles that lie on each ſide of the ſpine, avoiding as much as poſſible to burn him near the flanks, otherwiſe it will be apt to create a violent ſwelling in the ſheath, which would very readily bring on a fever.

The ſtrains in the hips are to be accounted for in the ſame manner as thoſe of the back and ſhoulders, only they are not ſo apt to create a fever, as the ſwaying of the back. Sometimes the round-head of the thigh-bone is by the violence of the accident thruſt out of its ſocket, and then a horſe is ſaid to be *hip-ſhot*; but if it is not reduced immediately

immediately he will be irrecoverably lame. The cure conſiſts in the ſame applications that are proper for a ſhoulder-ſplait.

## *SECT. L.*

### OF BONES BROKEN AND OUT OF JOINT.

THE replacing of bones that are disjointed is a very unſucceſsful operation, inſomuch that we have few or no horſes ever becoming ſerviceable after their bones have been miſplaced; but broken bones have often been recovered, and the famous Solleyſell gives an inſtance of a horſe that had a fractured bone with a large wound in the fleſh; and of a mule that had a fracture in his leg, both which were cured by one who was neither a ſurgeon nor farrier; and Ruini and other Italian authors have laid down a method of cure for all ſuch accidents, though the ſucceſs muſt be very much owing to the goodneſs of a horſe's conſtitution and ſagacity, there being ſome who will favour any infirmity or lameneſs more than others. When a bone is fractured the horſe ought to be raiſed in a ſling, and while one holds the member with both hands, three or four inches above the fractured part, another muſt extend it and draw it quite ſtreight, after which it is to be bathed with vinegar

vinegar and bole, and a thick towel dipped in the ſame liquor laid ſmooth round it; then with a roller, about two inches broad, make ſeveral rounds upon the fractured part both above and below it, making your turnings even, that the ſplinters may lie on cloſe; after which apply two or three ſplinters of wood wrapped up in a linen cloth or hurds, always taking care not to let any of their ends preſs upon the ſinews, and above them make ſeveral turns with a long roller upwards and downwards, until the ſplinters are firm and immoveable.

The leg muſt be often bathed above and below the dreſſing with ſtrong vinegar and goulard, or warm leys of wine, eſpecially for the firſt fortnight, the horſe kept to a laxative diet, and the dreſſing kept on for the ſpace of forty days, making it tight as often as it begins to turn ſlack. If the horſe is inclinable to favour his infirmity, he will recover without much trouble, but if it be otherwiſe, it will be proper to keep him conſtantly in a ſling, ſuffering the fractured member juſt to touch the ground.

This is the proper method for all fractures in legs and paſterns; but in caſes where other bones are broken, the greateſt part muſt be left to nature, who will make a re-union in her own way, though it may not be without ſome deformity; but we can expect no great aſſiſtance, either from art or nature, when a fracture happens on a large joint,

joint, or very near it, or when a bone is much ſhivered and ſplintered.

The uſual method to reduce bones that are diſplaced, is by laying the horſe on a ſoft place, and putting four ſtrong paſterns on his feet, drawing him from the ground, ſo as his whole weight may in a great meaſure reſt upon the disjointed member; we have ſeen two horſes ſerved in this manner for what is vulgarly called a diſlocation in the ſhoulder, but neither of them ſucceeded.

Some uſe a method which is much more cruel, they tie one end of a leather thong about the horſe's paſtern, and the other to a yielding ſhrub, and then by whipping him, make him ſtrain with all his force, till the bone returned to its proper place, but this method is not only dangerous but ſeldom ſucceſsful.

## *SECT. LI.*

### OF HURTS IN THE STIFLE.

THESE kinds of accidents are occaſioned by ſtrains or blows on the ſtifle-bone, which is the knee-pan of a horſe; ſometimes the ligaments which cover the bone are ſo much relaxed that it becomes looſe, moving upwards, downwards,

wards, and ſideways, by the touch of your hand, and the horſe going downright lame is ſaid to be *ſtifled;* but it is a general miſtake in authors to fancy the bone is miſplaced, that being merely impoſſible, unleſs the broad ligaments were cut, and then indeed it might burſt out of its place.

The cure conſiſts in the application of thoſe things that are proper to ſtrengthen the relaxed ligaments; if the ſprain be new, vinegar and bole, with a proper quantity of Goulard's extract, ought to be made uſe of, and after that a plaſter made of pitch, myrrh, olibanum, dragons-blood, &c. The pitch muſt be melted with a little hogs-lard, and the other ingredients made into powder, and ſtirred into it while it is warm, after which it may be poured upon the ſtifling place, covering it with flocks or ſtuffings of old ſaddles. The horſe ought not to be put to any hard exerciſe, but may go to graſs, or be led abroad for the ſpace of an hour every day, until he is able to bear greater fatigue.

## SECT. LII.

### OF THE BONE-SPAVIN.

THIS is a hard bony excreſcence growing on the inſide of the hough, not far from the elbow, and is generated of the matter which nouriſhes the bones and ligaments. Some horſes are foaled with this imperfection, but it proceeds for the moſt part from ſtraining while a horſe is too young to bear violent fatigue, which in proceſs of time cauſes lameneſs.

The main intention in the cure is to remove the excreſcences, but this is hardly practicable when it adheres to the bone as a part of its ſubſtance, but only when it lies as an appendage; in which caſe, it may be removed by a dextrous application of the fire, or by the uſe of cauſtic ointments; for theſe, by bringing a flux of matter, and a conſtant moiſture into the part, will by degrees looſen that hard ſubſtance from its adheſion, ſo that it may be eaſily taken off, and for this purpoſe we recommend the following:

Take corroſive ſublimate mercury levigated, half an ounce; æthiops-mineral, ſix ounces; Spaniſh flies, and euphorbium, in powder, of each ten

ten drachms; and with about half a pound of hogs-lard, mix them well together in a mortar for uſe.

The method of applying this ointment is, firſt to rub the part with a piece of round ſmooth ſtick, and then lay over it a ſticking-plaſter to guard the reſt of the hough; this muſt be made of roſin, common pitch, or Burgundy pitch, ſpread on a thick piece of leather, having a hole cut in the middle, that the tumour may come through it, upon which the ointment is to be applied, the hair being firſt ſhaved away, over which muſt be laid a pledget of clean hurds, faſtened with an eaſy bandage round the hough, or another ſticking plaſter over all. This ointment will at firſt draw out a thin water, but after two or three days application, it will form an eſchar, which may be ſcarified with a fleam or lancet, continuing the application every other day, until the bone becomes looſe, or its ſubſtance diſſolves; after it is removed, the ulcer muſt be dreſſed with honey of roſes, and tincture of myrrh warm, then healed with baſilicon mixed with turpentine, &c.

In giving the fire, Solleyſell adviſes to ſear the large vein above and below the thigh, from an opinion that the tumour is fed by it; but it is plainly otherwiſe, the office of that vein being only to take up and carry back that portion of

blood which is more than neceſſary for the nouriſhment of thoſe parts through which it paſſes, and when that conduit is once ſtopped, there muſt be a greater quantity of blood and nouriſhment retained in thoſe parts, at leaſt for ſome time, than before; wherefore ſuch an effect muſt be owing, not to an abatement of humours, but to an abundant moiſture derived from a greater quantity of blood, whereby the bone may be more eaſily ſeparated, as we have already obſerved; but if it has this good effect in removing a bone ſpavin, the loſs of ſo large a veſſel may eaſily be of worſe conſequence in other reſpects, as will be ſhewn hereafter.

## *SECT. LIII.*

### OF THE STRING-HALT.

THE ſtring-halt is an involuntary and convulſive motion of the muſcles, which extend or bend the hough; when it ſeizes the outſide muſcles, the horſe ſtraddles and throws his legs outwards; but when the inſide muſcles are affected, his legs are twitched up to his belly, ſometimes it is only in one leg, ſometimes in both; but theſe things are ſo well known that we need not inſiſt on them. It generally proceeds from ſome

ſtrain

ſtrain or blow, for whatever creates a more than ordinary pain in any particular muſcle belonging to the hough, may cauſe a too great derivation of blood and ſpirits, whereby ſuch an habitual contraction may be produced.

The cure is difficult and rarely attended with ſucceſs, though, in the beginning, a ſtring-halt may be removed with good rubbing and the uſe of fomentations, with daily but moderate exerciſe; for by this means the blood and ſpirits may be equally derived into the diſeaſed muſcle, and its antagoniſt. The laſt refuge is uſually the fire, which has been known to anſwer, at leaſt ſo far as to prevent abſolute lameneſs.

## *SECT. LIV.*

### OF THE BLOOD-SPAVIN.

THIS is a dilatation and ſwelling of the maſter vein on the inſide of the hough, and is juſtly compared, by Solleyſell, to a varix in men; its cure is performed by taking up that part of the vein which forms the tumour, and healing the tumour with proper digeſtives and good bandage; ſome think it ſufficient to tie a ligature above the ſwelling, and then make an aperture into the vein, letting it bleed until the ſwelling fall, after which unbind

unbind the ligature and apply a reſtringent charge of whites of eggs, bole, and vinegar, with a firm bandage; but this is not ſo certain, eſpecially when the ſpavin is formed under the great joint of the hough, and where the vein takes a winding turn round it, in which caſe it will be apt to grow again as ſoon as the bandage is removed; but a cold charge is very neceſſary all round the joint when the vein is taken up, to prevent the ſwelling that muſt follow upon the operation.

## *SECT. LV.*

### OF MALENDERS AND SELENDERS.

THE malenders are chops or chinks on the bending of the knee, which diſcharge a ſharp indigeſted matter, cauſing pain and making the horſe go lame before; as the ſelenders which appear on the bending of the hough, make him go lame behind. They both proceed from the ſame cauſe, and are ſometimes accompanied with a ſcab, and with a conſtant ſtarting and briſtling of the hairs.

The proper method to cure theſe infirmities is, in the firſt place, to waſh them with a lather of black-ſope, warm, or with cold chamber-ley, after which apply a pultice of the roots of marſh-

mallows

mallows and linſeeds, ſoftened with linſeed-oil; and as often as it is applied, you may mix half an ounce of camphor, in powder, tying it on with a roller; this may be continued till the ſcabs fall off, and the ſores grow clean. Then take turpentine and quickſilver, equal parts, ſtirring them in a mortar till they are well incorporated; ſpread a pledget with this ointment and apply it to the ſore, tying it on as above directed, and renew the dreſſing every day until the cure is performed, obſerving alſo conſtantly to waſh all the chinks with brandy or ſpirit of wine.

## *SECT. LVI.*

### OF THE HOUGH-BONE.

THIS is a hard tumour that grows on the elbow of the hough, and is ſinewy, like the matter which covers that bone; it proceeds from a ſtrain or blow, and when it happens to be of long continuance it becomes difficult and hard to be cured, the ſubſtance of the ſwelling being like hardened glue.

In the beginning take the ointment of marſh-mallows, and oil of amber, as directed in a preceding Section againſt ſtrains in the ſhoulder, and rub it into the part, holding a hot bar of iron very cloſe,

cloſe, that it may penetrate the ſooner into the place affected, taking care to fetter the horſe ſo as he may not ſtrike; if it does not yield to this remedy, take a ſufficient quantity of the diachylon with the gums, which may be had at any chymiſt's; melt it in a pipkin, and pour it warm upon the top of the hough, renewing it as often as it begins to waſte. If the ſwelling increaſes and turns to an impoſtume, it may be ripened with cataplaſms, and opened with a hot iron, piercing from below upwards, and dreſſed with the common digeſtive of turpentine and honey, or the yelks of eggs, with a mixture of ſpirits of wine, making a firm bandage over the part, and by theſe means it will be cured; but in caſe of a continued and obſtinate hardneſs, you muſt proceed to the fire, firſt penetrating a little way into the body of the tumour, with a round iron, and drawing from thence ſeveral ſuperficial lines, which may be dreſſed according to the method already laid down for performing that operation.

*SECT.*

## SECT. LVII.

### OF THE CURB.

THIS is a ſwelling on the ſinewy parts of the leg, a little below the elbow of the hough, but ſomewhat higher than the ſpavin on the inſide, and is generated of the ſame matter that nouriſhes the tendon and ligaments; it is broader and higher at its upper part than below, and ſometimes cauſes the horſe to halt by hindering the action of the joint. It happens chiefly to draught-horſes, and is hardly cureable by any other means than by the actual cautery; however the medicines directed in the laſt Section may firſt be applied, and renewed as neceſſity may require.

We have not the leaſt doubt but it will be of the utmoſt ſervice in removing all hard ſwellings on the bones or ſinews, by diſcuſſing them; ſometimes it has the effect of a ſuppurative plaſter, and will cauſe an impoſtumation, which equally anſwers the end, as theſe ſorts of tumours often terminate that way with good ſucceſs.

## SECT. LVIII.

### OF A JARDON.

THIS is a hard callous tumour, a little below the bending of the ham on the outside; it is at first scarcely discernible, but in time causes the horse to halt, and grows so painful as to make him pine away and become light-bellied; but it happens most frequently to managed horses, especially those who have been kept too much on their haunches. The cure may be first attempted by applying mercurial plaster, as above directed, but if it proves obstinate, it must be treated as a bone-spavin, &c.

## SECT. LIX.

### OF SPLENTS, OSLETS. &c.

A Splent is a hard callous substance, which adheres to the inside of the shank-bone; when there is but one it is called a *single splent*, but when there is another opposite to it on the outside of the shank-bone, it is then called a *pegged* or *pinned splent*.

The reason of all such excrescences may be easily enough apprehended, by those who will take the

the pains to examine the ſhank-bone of any horſe after the fleſh is ſcraped off, where they may obſerve two appendages growing on the ſhank-bone, which are to be met with in all horſes that are young, though the ſeam by which theſe bones are joined to the ſhank is in ſome old horſes quite obliterate and woren out, except in the middle; each of theſe appendages reſembles a bodkin, being broad at top and narrow at bottom, and are joined to the ſhank by appoſition, and faſtened by a gummy matter not unlike glue.

Therefore if a young horſe be preſſed with an extraordinary weight towards the ſhoulders, before theſe bones are properly cemented and put together, but eſpecially when he goes down hill with a burthen, or a heavy man upon his back, it bears ſo hard upon his fore-legs, that it cauſes theſe bony appendages to give way and ſuffer a diſtortion, and though the horſe does not always grow lame upon it immediately, yet it brings a redundancy of this glutinous matter, which ouzes from between the bones, on the inſide of the ſhank, where there is a little hollowneſs and hardneſs under the perioſteum, like a gum which iſſues from a wounded tree, and is thus formed into a ſplent. But when the diſtortion is violent, or if the horſe be of a tender delicate make, the afflux of the matter will be the greater, ſo that it ouzes through the oppoſite ſide alſo, and forms a pegged or thorough-ſplent, which looks as if a wedge was

ſtruck quite through the bone; ſometimes a double-ſplent is formed, which is called by the French a *fuzee*, and this happens when there is a freſh afflux of matter upon the ſplent, that is already begun like the lays upon an iſicle, by the running down of freſh water upon it. This laſt ſort cauſes a very great deformity, and is therefore eaſily perceptible.

Moſt of theſe ſwellings make their firſt appearance a pretty way below the knee, where the cleft between the bones is the wideſt, which is very natural, and in ſome caſes, but eſpecially when they are of long continuance, they not only aſcend to the knee, but go a good way down the ſhank, and ſometimes ſpread backwards towards the maſter-ſinew.

Oſſets are little hard ſubſtances that ariſe among the ſmall bones of the knee on the inſide; they grow out of the gummy ſubſtance which produces ſplents, and like them proceed from the ſame cauſe, viz. the ſtraining of a horſe while he is young, and before his joints be well knit, and from hence alſo we may underſtand the nature of all thoſe hard tumours already treated of, which grow near the joints, whether they be ſpavins, jardons, curbs, or any other kind; their chief difference conſiſting of their ſituation, being all of them formed of a matter which in time grows as hard as the bone itſelf; and this is the reaſon why they cannot be moved, but by things that are of

the greateſt efficacy. Notwithſtanding if they be diſcovered before they acquire ſuch a degree of hardneſs, they may be made to yield to leſs powerful remedies than what we are ſometimes conſtrained to make uſe of.

As to ſplents, which are our preſent buſineſs, it is very plain from what has been ſaid concerning their origin and growth, if the infirmity could be diſcovered at firſt, they might be kept down and wholly prevented by the application of a firm bandage upon the ſhank; for by it, not only the bones would be conſtantly kept cloſe together, but the perioſteum and fleſh united to the bones, ſo that there would be no room for any ſuperfluous matter to lodge betwixt them; but theſe are ſeldom taken notice of until they bring a deformity along with them, or a halting; they muſt therefore be treated as other hard ſubſtances of the like nature. If the horſe be young, and the ſplent not of very old ſtanding, an attempt is to be made to diſſolve it; and for that purpoſe, nothing is preferable to the mercurial plaſter, for which ſee Index. It muſt be applied ſpread on leather, and continued a conſiderable time, ſhaving away the hair as often as it is renewed; but if it is not to be removed without ſuppuration, then rub it ſoundly with the blood-ſtick; and after its ſubſtance has been thus bruiſed, it may be brought to an impoſtume, by applying the mucilage plaſter, or ſome good pultice made of the roots of lilies,

lilies, marſh-mallows, bean-flower, fenugreek, and linſeed powder, and ſuch like, with a ſufficient quantity of hogs-lard, and then the matter may be diſcharged as from a common boil or impoſtume, by making a ſtreight inciſion upon it from below upwards. But if a more expeditious method be required, the cauſtic ointment inſerted before may be applied, with the neceſſary precautions, obſerving farther not to continue it longer than an eſchar is formed by it; or the following method may be complied with, which is very eaſy:

Shave the hair, knock, rub, and ſoften the ſplent, then take a piece of the rind of bacon not very fat, and lay it on the part with fat ſide outwards, afterwards applying a flat cautery, or red hot iron of the breadth of a ſhilling, holding it upon the ſkin, and in the mean time order another iron to be heated, which muſt be applied to another part of the ſkin, but ſtill over the ſplent; continue after the ſame manner, till the ſwelling be diſſolved, then lay a plaſter over it, and ſhavings of cloth over that, taking care that the horſe do not bite it off.

One thing is very material after the removal of a ſplent, and that is, to keep a firm bandage over the part for ſome time, to prevent its return; for unleſs the parts be kept very cloſe, the ſame matter which breeds it at firſt, will be apt to engender it again. When the bone happens to be laid bare,

bare, it muſt be treated according to the method laid down in the cure of wounds.

The cure of a ſplent is hardly to be attempted if the horſe be grown old, for the matter becomes then ſo hard, that there is no way to make it yield without running a very great hazard, neither is it curable, when the diſeaſe is in the bone; for though this is ſometimes miſtaken for a ſplent, yet it is for the moſt part no other than what proceeds from a caries or an ulcer in the bone, which in time has been healed, and grows into a flinty ſubſtance. This may be known by its bunching out and unevenneſs, and by its hardneſs. The oſſets are more difficult and hard to be cured than ſplents, becauſe of their ſituation among the ſmall bones which are in the joints, and are therefore only to be attempted by giving the fire, though even that is not always attended with ſucceſs; but theſe are rarely to be met with.

## *SECT. LX.*

### OF A RING-BONE.

THIS is a hard callous ſubſtance, which grows in the hollow circle of the little paſtern, immediately above the coronet; it is ſometimes hereditary, but more frequently occaſioned by a ſtrain,

ſtrain, and is bred of the like matter with the other hard ſubſtances we have treated of in the preceding Sections; ſometimes it goes quite round like a ring, from whence it has obtained the name of *ring-bone*.

The uſual method of taking it off, is by the application of ſtrong cauſtic medicines, ſuch as quick-lime, arſenic, realgar, and the like, the hair being firſt ſhaved and the hard ſubſtance ſcarified; ſome uſe unſlacked lime in powder, and apply it pretty thick over the part, faſtening it with a cloth, and then ride the horſe into the water, letting him ſtand ſome time in it, by which means the ſubſtance of the ring-bone is deſtroyed, and there is nothing farther neceſſary than to heal up the ulcer. This is a very expeditious way, but whoever tries it had need be careful to guard the coronet, or elſe it will be very apt to cauſe a gathering of matter under the hoof, which would readily corrode the coffin-bone. There are others who cut the ring-bone ſtreight downwards to the coronet in ſeveral places, and put in rowels, which by forming ulcers, and bringing a rottenneſs and corruption all about the part, cauſe the excreſcences to looſen or melt away.

Solleyſell obſerves, that ſome ring-bones cannot be removed without giving the fire, nor does that always ſucceed, but when the ſole is alſo taken out, and the frush laid open; for by this, there is a very great moiſture derived into the part,

part, and at the ſame time, room given for the matter to diſcharge itſelf, which might otherwiſe looſen the coronet by being detained in the hollow circle of the paſtern: the preſent farriers' method is this, they take out the ſole, and after the ſecond dreſſing, cut the ſkin in ſeveral places above the coronet, ſo as to lay the ring-bone bare; then with a hot knife cut the ring-bone through, till they reach the bottom, not all at once, but repeating the ſtrokes gently; in the mean time make a cleft in the fruſh, and keep it open by applying into it pledgets dipped in a mixture of tar and turpentine, laying the ſame dreſſing to all the ſeared parts, until the eſchars fall off.

It is very plain that a ring-bone may be removed by any of the preceding methods, when rightly managed, and the only thing that makes them unſucceſsful is, when a horſe happens to be old or diſeaſed, or when it chances to be a natural imperfection; but the moſt common impediments are the want of ſkill to heal up the ulcers, to prevent the matter getting under the hough, likewiſe to keep down the growth of new excreſcences which are apt to ariſe on thoſe parts; therefore as ſoon as the pain and anguiſh are over, the ſores ſhould be dreſſed with Ægyptiacum, or ſome other cleanſing ointment, and all the hollow parts round the paſtern filled with tow dipped in vitriol-water, or rather ſpirit of wine and camphor; and over all a

bandage as firm as the horſe can bear, reaching from beneath the coronet almoſt to the knee, this being the true method to prevent the ill conſequences that may ariſe in the cure, &c.

## *SECT. LXI.*

### OF WIND-GALLS.

WIND-GALLS are ſoft, yielding, flatulent tumours, ſeated on either ſide of the footlock-joint, &c. they are cauſed by violent ſtraining, or by a horſe ſtanding on a ſloping floor, and by ſeveral other accidents, as blows, and ſtrokes from other horſes, &c.

The uſual method of cure is by opening them with a fleam, to let out the gummy matter, and apply to the orifice a little plaſter of roſin, pitch, maſtic, and oil of bays, with the white of an egg; and there are ſome who mix with plaſters of this kind, verdegris and turpentine, which are not amiſs; but the ointment made of equal parts of quick-ſilver and turpentine will anſwer the end much better, eſpecially if with it be mixed a ſmall quantity of verdegris, and the white of an egg to make it ſtick faſt to the part. The hollow ſpaces on each ſide of the ſinew ought to be filled with hurds, moiſtened in warm ſpirit of wine, good bandage

bandage applied over all the footlock, to prevent their growing again.

To wind-galls that are large, emollient and ſoftening medicines are to be made uſe of, as pultices made of mallows, marſh-mallows, &c. or the mucilage plaſter of diachylon, with the gums ſpread thick upon leather. Or the following charge may be applied :

Take gum-ammoniac, two ounces, diſſolved in a pint of vinegar, with four ounces of Venice turpentine ; after boiling it half an hour, take it from the fire, and ſtir into it in powder dragons-blood and French bole, of each four ounces ; ſome of this charge ſhould be applied while it is hot.

If recourſe may be had to cauſtic medicines, an ointment may be made with quickſilver and turpentine, of each an ounce ; euphorbium and Spaniſh flies, in powder, of each one drachm ; this may be applied to the wind-gall, taking care to guard the great ſinew, and the neighbouring parts, as directed in a preceding Section.

The horſe muſt always be tied up, to hinder him from biting it off ; but if this cauſes too great an inflammation, as may happen to ſome delicate horſes, the ointment may be made weaker by mixing a greater quantity of turpentine with it.

## SECT. LXII.

### OF A SINEW-SPRAIN, &c.

IF the maſter ſinew above the hough, or that above the footlock, or any other ſinews or ligaments in thoſe parts, are ſtrained or relaxed, they cauſe intolerable pain and lameneſs; and when violent, will ſometimes bring on a fever, and endanger a mortification, unleſs there be extraordinary care taken and timely applications made; therefore as ſoon as you obſerve your horſe ſtrained in any of thoſe parts, which if it be in the ſinew, may be known by its being unbent and relaxed, and by the ſwelling and inflammation; you muſt apply a cold charge, or immediately rub in Goulard's extract, ſuch as has been directed for ſtrains in the ſhoulder, &c. after that a plaſter to ſtrengthen the part; but if it be ſo violent as to create ſome untoward ſymptoms, making the horſe ſick and forſake his food, you muſt, in that caſe, take a good quantity of blood from the neck, and bathe all his leg two or three times a day with woollen cloths, wrung out of a hot fomentation, made of Goulard's vegeto-mineral, for which ſee Appendix. It will ſtrengthen and cool the nervous parts, after which you may uſe ſtrong ſpirit of wine, camphorated, keeping it alſo covered with

a cloth,

a cloth dipped in the ſame, and faſtened with an eaſy bandage. Inwardly may be uſed all ſuch things as are proper to promote ſweat, and eaſe pain; as ſoon as the anguiſh is over, it will be proper to apply a good ſtrengthening charge or plaſter of pitch, diachylon, dragons-blood, bole, &c. as has been directed in a preceding Section.

Sometimes the ſtrains in the ſinews of the leg and paſterns are occaſioned by an attaint or overreach; we need not therefore beſtow any other place in treating of ſuch accidents, but only take notice that when they are accompanied with a wound, they ought to be dreſſed according to the directions we have already laid down for the cure of wounds, avoiding as much as poſſible all oily and cauſtic medicines, excepting when ſome preternatural excreſcences require the uſe of the latter.

The ſame manner of treatment is alſo requiſite to a horſe that is galled or wounded, by being caſt in his halter, applying nothing but clean digeſtives of tar, turpentine, and honey; making uſe of ſpirituous fomentations, with a little quantity of pot-aſh boiled in them; together with bandage, as ſoon as the part is able to bear it; and by theſe the horſe will be eaſily cured, if he be otherwiſe in good caſe, without the pain of corroſive applications, which only become neceſſary after the

ſinews

ſinews have been relaxed, and rotted with greaſy ointments.

## *SECT. LXIII.*

### OF THE GREASE FALLING INTO THE LEGS.

THE diſtemper that goes under this denomination is a ſwelling and gourdineſs of the legs, which frequently happening to horſes after a journey, moſt people have therefore believed their greaſe to be melted by hard riding and fallen into their legs, and that which has probably given encouragement to this opinion, is the colour of the matter iſſuing from the chinks and ſores in thoſe parts, when they come to break, ſomewhat reſembling greaſe, as the ſubſtance of the legs is nervous and ſinewy, whereby the matter which comes from thence is different from what is diſcharged from the muſcular and fleſhy parts, where the redneſs and texture of the blood gives it a different colour and conſiſtency.

It would be very little to our purpoſe to beſtow any time in confuting this ill-grounded opinion, ſince the contrary muſt be manifeſt to thoſe who have the leaſt inſight into the œconomy and ſtructure of a horſe; we ſhall therefore proceed to acquaint

quaint the reader that the greaſe is, in common with all other ſwellings, either a viſcidity and thickneſs of the juices, or a relaxation of the veſſels in which theſe juices flow, or both.

If we examine more particularly into the matter, we ſhall find that, beſides theſe, there are other circumſtances which conduce very much to the ſwelling, and that is, the ſituation and make of the legs.

As to their make, we have already obſerved that they are very much compoſed of nerves and ſinews, whoſe veſſels are ſo ſmall, and laid ſo cloſe together that the fluids contained in them may very eaſily become obſtructed, and by their ſituation they are the moſt dependent members of the whole body; whereby, according to the doctrine of the circulation, all the juices that are to be returned in the maſs of blood muſt aſcend upwards in the veins, which in thoſe parts have little or nothing to help their progreſs, but the vibrations and ſhakings of the arteries, together with the muſcular motion. Whereas, on the other hand, the arterial fluid is conſtantly forwarded into the limbs, not only by its deſcent, but by its continual expulſion from the heart, and therefore when once the blood is vitiated and the veſſels in the limbs relaxed and weakened, a ſwelling muſt of conſequence be expected, becauſe a greater quantity

tity of fluid is carried downward by the arteries, than in that caſe can be returned by the veins.

This is agreeable to all the common accidents and cauſes that uſually bring on the diſtemper, as wounds, bruiſes, hard and immoderate riding, comming off a journey, or from graſs to ſtand in a ſtable, full feeding without due exerciſe, colds and ſurfeits, debility and weakneſs, and in fine whatever may otherwiſe relax and weaken the tone of the fibres; and if we examine into theſe more particularly, we ſhall find, that according to the foregoing theory, all of them may very naturally bring on the greaſe.

For, in the firſt place, a wound or bruiſe, or other outward accident in the dependent parts, are ſeldom attended with any uncommon ſymptoms, if the horſe be otherwiſe ſound, and that due care is taken in the beginning; yet, if a horſe in theſe circumſtances be neglected, or his blood be vitiated, it will beapt to bring a ſwelling in to the legs, as all pain is a ſtimulus, which draws a more than ordinary flux of humours to the part affected; and if the hurt be near any joint, &c. it cauſes ſuch a ſtiffneſs and aching, that the horſe becomes exceeding lame and unable to lie down, ſo that by continual ſtanding, the legs become ſwelled and goarded.

Secondly,

Secondly, by immoderate hard riding, the ſinews and ligaments are ſtretched; which is ſuddenly followed with a ſtiffneſs and pain in the joints, whereby, as in the preceding caſe, a flux of humours is drawn down upon the legs.

Thirdly, when horſes are come off a journey, or from graſs, to ſtand in a ſtable, their legs are apt to turn gourdy and ſwelled; the firſt of theſe caſes differs not from the preceding in what relates to the pain and ſtiffneſs in the limbs, but it has alſo in common with the latter, the abrupt breaking off a habit from exerciſe to reſt and full feeding; for while a horſe is upon his journey, or at his liberty in the fields, he is every day more or leſs in motion, whereby the blood is kept in conſtant agitation; but when he comes to ſtand ſtill in the ſtable, a check is put to the motion of the blood in the ſmall veſſels of the limbs, while, by an habitual aptitude, it ſtill continues to be equally detached into all parts by the larger arteries, which may eaſily bring on the greaſe, even while there is yet no manifeſt diſorder in the blood itſelf; but in the caſe of horſes newly taken up from graſs, there is beſides this oftentimes a default in the blood, eſpecially when they are ſuffered to run abroad till late in the year, for then the graſs loſes its ſtrength and begets crudities, which render the blood and other juices viſcid and thick; and when a horſe is taken off his exerciſe and brought to more generous feeding, a plethora or fullneſs will

ſoon happen, whereby it will be more apt to ſtagnate in the limbs, and cauſe ſuch heat and itching as muſt be ſoon followed with a gourdineſs and ſwelling. The ſame effect is alſo produced by colds, ſurfeits, and ſometimes by pampering, and full feeding alone, without the concurrence of other circumſtances. And laſtly, when a horſe has been brought low by ſickneſs, or repeated evacuations, or by any other cauſe, there follows an univerſal relaxation of the body, ſo that the blood and other juices become languid, and are apt to ſtagnate in thoſe parts that are the moſt dependent and remote from the heart, not only as the veſſels themſelves are relaxed and loſe their ſpring, but alſo from the heavineſs and inactivity of the ſpirits, whereby they become unable to give their aſſiſtance in return, and thus the greaſe is oftentimes complicated with ſome other diſtemper.

From what has been ſaid, it will be eaſy for any one to underſtand the nature of the greaſe and the manner of its production; we ſhall therefore proceed to the cure, wherein the firſt thing to be regarded is the ſtate and condition of the horſe, for if the greaſe be an attendant on ſome other ſickneſs, the cure will be ſo much the more difficult, and it will be in vain to expect a recovery, until the diſeaſe is removed which has been the cauſe of it; and therefore, if the horſe be hectic, or has got the yellows, farcy, &c. the methods laid down for the cure of thoſe diſtempers muſt

be

be followed, at the ſame time proper applications made outwardly; but if it be produced of the common and ordinary accidents, and that the horſe is not otherwiſe diſeaſed, a method peculiar to that diſtemper only is to be obſerved.

In this caſe, if the horſe has been pampered and well fed, the cure ought to be begun by bleeding and purging, to leſſen the redundancy of humours, neither ſhould theſe be too often repeated; but what is wanting that way, had much better be effectuated by a more ſpare diet with daily exerciſe; for in all the circumſtances of the greaſe, there is a tenderneſs and delicacy, either original or brought on by habit or ill uſage, which is alſo manifeſt from hence, that young horſes are moſt ſubject to the greaſe, as their bodies are looſe, ſoft, and flexible, and their juices naturally viſcid and glutinous, which is neceſſary to the accretion and growth of young animals. Wherefore, when evacuations are too large, or often repeated, inſtead of being ſerviceable they often become hurtful, and render the diſtemper more obſtinate, by adding to that weakneſs and relaxation of body, which is natural to greaſed horſes.

After moderate evacuations, a rowel may be made on the inſide of the thigh, or on the belly, which may be continued for a month or longer, if there be occaſion, and in the mean time the cinnabar or antimonial alterative balls, &c. ought to be conſtantly given in the manner we have al-

ready laid down for the cure of the farcy; and while theſe things are complied with internally, the legs ſhould be frequently rubbed, but not with ſuch hard inſtruments as ſome people make uſe of, a good wiſp of hay and a bruſh being ſufficient for that purpoſe. Baths, and fomentations, ſuch as may draw off the humours by tranſpiration, or render them fit to return again with the common current, are alſo to be made uſe of, and for this purpoſe, we recommend the following:

Take of oak-bark, in powder, four ounces; wormwood, four handfuls; camomile-flowers, three ounces; boil them all together in three gallons of water, to two gallons, then ſtrain it, and add a quart of ſtrong ſpirit of wine, and uſe it pretty warm.

The horſe's legs are to be bathed three or four times a day, with woollen cloths wrung out of the hot liquor, and applied as hot as he can bear them; and if they be pretty much inflamed, as happens ſometimes when the ſinews are affected, a good quantity of aſhes of green twigs of vines or walnut-trees, may be boiled in the decoction, adding more water. A good bath or fomentation may be alſo made, by boiling theſe aſhes alone, or the aſhes of any other green wood, in water, when the other ingredients are not eaſy to be had. The leys

leys of wine, with a mixture of black-ſope, is alſo very proper to be applied warm; as alſo cow-dung boiled in vinegar. The following lotion may likewiſe be made uſe of with good ſucceſs:

Take linſeed-oil one pint, diſſolve an ounce of camphor in the oil, and rub ſome of it very often into the parts affected.

Or,

Take linſeed and fenugreek, in powder, two pounds each; lily-root, one pound; boil them till the lily-root is ſoft enough to mix with the powders in as much water as is neceſſary, then mix a pint of the above oil and camphor in it for uſe.

Spread this on a cloth and apply it warm to the legs, faſtening all with a ſtrong roller. This may be continued for a week, renewing it once in two days.

The camphorated ſpirit of wine alone is very good, viz. an ounce of camphor to every pint of the ſpirit, and if it be frequently uſed it will anſwer in moſt caſes where the ſwelling is recent and new, and when it has a tendency to break, or even has broke; for by its great warmth, it puts a check to that heat and itching which is often the fore-runner of chops and ſores.

Some

Some young horſes are ſo tender and apt to be greaſed, that even the impreſſions of the cold air in winter will bring a ſwelling into their legs, in the ſame manner as it becomes the cauſe of kibed heels in children, by conſtringing and ſhutting up the pores in thoſe parts, and all the care imaginable can hardly prevent it. No other means need be made uſe of in theſe caſes except moderate and daily exerciſe; but in all obſtinate caſes, a horſe ſhould be turned out to graſs, where he may have his full liberty.

## *SECT. LXIV.*

### OF THE SORE HEELS.

THESE ſores or kibed heels generally ſhew themſelves on the inſide of the hind paſtern, and in the heels; ſometimes they are cauſed by gravel or dirt wounding thoſe parts, or by travelling in deep roads; but for the moſt part they proceed from gourdineſs, that being the firſt place where the matter begins to diſcharge itſelf. If they proceed only from riding in deep gravelly roads, they may be cured without any farther trouble than keeping them clean, waſhing them often with chamber-ley or brine; but when they are the effect of the greaſe, they become

ſomewhat

ſomewhat more difficult to be removed, and ſend forth abundance of ſtinking matter.

While the ſwelling is large they ought not to be dreſſed with medicines that dry too faſt, but with ſuch as are moderately cleanſing; for which purpoſe two parts of baſilicon, with one part of Ægyptiacum, will be very proper; bathing all the chinks and ſores as often as they are dreſſed, with ſpirit of wine and camphor, if there be a great foulneſs and rottenneſs; Ægyptiacum alone may be made uſe of, but if that is not ſufficient, you may mix with every ſix ounces of Ægyptiacum, white-vitriol and powder of galls, of each half an ounce, with an ounce of ſavin in powder. As ſoon as they are become clean, quickſilver and Venice turpentine will perfect a cure. It will always be proper to keep a cloth over your dreſſings, fixed on a roller, forming a croſs on the inſide of the paſtern, that you may make your turns above and below the joint, by which means its action needs not in the leaſt be hindered.

Care ſhould alſo be taken to diſſipate the ſwelling, according to the method laid down in the preceding Section, neither ought internals to be omitted, if his conſtitution be faulty, which may be eaſily known by the diſpoſition of the ſores.

*SECT.*

## SECT. LXV.

### OF THE PAINS OR WATERY SORES ON THE LEGS AND PASTERNS.

THESE are cauſed by a ſerous matter ouzing through the pores, which is accompanied with ſuch a ſharpneſs, that it makes the hair fall off from ſeveral parts of the legs and paſterns; ſometimes it looſens the coronet from the hoof, and ſometimes the fleſh appears as if it was diſjoined from the bones and ſinews; wherever the matter runs, it ſo hardens the ſkin, that it is apt to break out in cracks and clefts, which diſcharge abundance of ſtinking matter, as in the above-mentioned caſe.

The cure conſiſts chiefly in internals, and in thoſe things that are proper to rectify the blood, as decoctions of box-wood, guaiacum, ſaſſafras, &c. or the ſaid woods may be raſped and mixed with his oats, and ſometimes among dry bran. All the medicines preſcribed in the farcy may be made uſe of in this caſe; but if the horſe be inclinable to a dropſy, which may be known by the yielding of the ſwelling, and likewiſe as the fore leg will alſo be affected, and by the other ſigns peculiar to that diſtemper, he muſt then be treated accordingly; mean while, the medicines in the laſt Section may be made uſe of outwardly.

As

As ſoon as the ſwelling is abated, and the moiſture dried up, it will be very neceſſary to keep the legs and paſterns rolled up with firm bandage, whereby the parts will not only be kept cloſe, but the influx of freſh matter prevented; for the continuance or frequent returns of thoſe watery eruptions, bring ſuch a looſeneſs into the legs, that they cauſe a rottenneſs in the frush, breed ſplents, and ſometimes, by rotting the tendons, become the cauſe of quitter-bones, foundering, and other diſtempers in the feet.

## *SECT. LXVI.*

### OF WARTS, SCRATCHES, RATS-TAILS, AND OTHER EXCRESCENCES ON THE LEGS AND PASTERNS.

THESE are all of the ſame kind, and are more or leſs dangerous, as they are ſituated nearer or at a diſtance from the large ſinews.

Warts may be waſted by touching them now and then with aquafortis, or may be cut off when they are ſuperficial; the ſcratches are, for the moſt part, bred of ſome tendinous ſubſtance, and have their roots in or near the tendons, like the corns in men's feet; ſometimes they grow ſo hard that by preſſing upon the ſoft parts, they cauſe

violent pain and inflammation; but when this happens, a good pultice ſhould be applied to ripen the inflammation, which ought to be ſcarified as near the excreſcences as poſſible; unleſs the matter ſpring naturally from the roots of it, which will looſen them ſo as they may be eaſily removed by the uſe of medicines that are moderately corroſive; therefore, to proceed methodically, whenever you obſerve a moiſture and rottenneſs, you need only apply a lump of rye leven, mixed with vinegar and the juice of garlic, or muſtard-ſeed pounded; and in two or three times application, it will bring out the rottenneſs. Stamped onions, the roots of marſh-mallows and houſe-leek, made into a paſte with barley or rye flour, has the ſame effect. The mucilage plaſter, or the diachylon with the gum, ſpread on leather and applied to the part, will alſo be very ſerviceable; but if the ſcratches be hard and lie on the ſinews, and thereby occaſion pain and inflammation, endangering a fever, in that caſe it will be proper to take blood from the thigh-vein, and to keep the horſe to an opening diet. Then apply the following cataplaſm, firſt ſhaving away the hair:

Take lily-roots, two pounds; fenugreek and linſeed, in powder, of each one pound; boil them till the root is ſoft enough to be beat into a pulp, then mix them together, to which add a pint

a pint of ſweet oil, wherein an ounce of camphor has been diſolved.

This may be laid over the part, and renewed every day until the heat and inflammation is over, and the excreſcences grow ſoft and looſe; after which they may be managed as before directed.

Sometimes ſcratches are put forth from ſinous ulcers which penetrate the bone, in this caſe you muſt introduce your probe at the orifice, and try all the different ways it reaches, making inciſion with a hot knife wherever the part will admit of it; then make your cure according to the directions laid down for the cure of wounds, &c.

Rats-tails are diſtinguiſhed from the other, becauſe they generally creep from the paſtern to the middle of the ſhank, along the maſter ſinew, or on the ſide of it, and are ſo called from the reſemblance they bear of the tail of a rat; ſome are moiſt and ſome are dry, and differ only from ſcratches in their figure and ſituation, and therefore admit of the ſame method of cure. If they be hard, they may be looſened or cut off with a hot knife, and afterwards dreſſed with turpentine, tar, honey, and if neceſſary the powder of verdegris and white-vitriol may be mixed with it.

The following applications are generally uſed for the cure of ſcratches, rat-tails, kibes, &c. about the legs and paſterns:

Take hogs-lard, one pound; white precipitate, levigated, two ounces; ſpirit of vitriol, half an ounce; mix them very well together for uſe. Some of this ointment ſhould be well rubbed into the affected places every night and morning.

Orpiment, arſenic, realgar, and ſuch like things, are alſo made uſe of in the ſame intention, in the form of ointments, with honey and hogs-lard; and ſometimes into that of a pultice, by a mixture of flour, barley, and rye-meal, and ſometimes ſoot. But theſe hot burning ingredients are never properly made into the form of a pultice, but are chiefly fit for ointments, which are deſigned only to cover the excreſcences, without touching the neighbouring parts.

Solleyſell recommends a remedy which he calls a *white-honey charge*, for the cure of all theſe excreſcences. It is as follows:

" Take eighteen large white lily-roots, chop and boil them in two gallons of whey, or barley-water; when the roots begin to grow ſoft, add the leaves of mallows and marſh-mallows, of each ten handfuls; continuing to boil them till they be all reduced to a perfect maſh, pouring in liquor, from time to time, to ſupply what is evaporated; then paſs the ingredients through a hair ſieve; take what paſſes

paſſes through the ſieve and boil it again with a pound of tallow, and the like quantity of butter, then remove it from the fire; and when it has done boiling, add honey and common turpentine, of each a pound; and make the whole into the conſiſtence of a pultice with wheat flour."

This is to be applied cold, in the manner of a pultice, once a day, and it will very much help to ſoften thoſe excreſcences, and take out the heat and anguiſh wherewith they are often attended. The ſame author preſcribes alſo an ointment made of crude quickſilver and brimſtone, with a double quantity of tallow, which is alſo very good, but would be much better with equal parts of tallow and turpentine.

## *SECT. LXVII.*

### OF A QUITTER-BONE.

A Quitter-bone is an impoſtume between the hoof and coffin-bone, on the upper part, and makes its firſt appearance by a ſwelling on the coronet. It proceeds from a blow, a ſtrain, or an over-reach, and ſometimes it is cauſed by a long-continued ſwelling of the legs, paſterns, &c.

If

If this ulcer be not of a very old ſtanding it may be cured by the application of Ægyptiacum, mixed with baſilicon or turpentine; but if it be of ſome continuance, and that probably the matter has, by lodging between the hoof and coffin-bone, rotted the coffin-bone, or the tendons of the muſcles that paſs between that bone and the hoof, you muſt in that caſe open the tumour with a razor or other ſharp inſtrument, cutting away all that is corrupted and rotten, either under the hoof or any part of the foot, and to make way for your operation, you ought to raſp down ſome part of the hoof. If any bits remain that you cannot eaſily come at with your inſtrument, you muſt bring them off by applying doſſils of flax, dipped in Ægyptiacum made warm; which for the moſt part will ſuffice; laying over all pledgets ſoaked in hot tar. If you find ſome difficulty in ſeparating that griſtly ſubſtance, you may mix equal parts of myrrh, aloes, and ſublimate, all in fine powder, making it into a paſte with a ſufficient quantity of ſpirit of wine, and apply it to the remaining griſtle, laying over it pledgets ſoked in hot tar, as before directed; as ſoon as it is freed from all the ſuperfluous ſubſtances, and looks clean, you may heal up the ulcer with tar, turpentine, and hogs-lard; waſhing it now and then with copperas and vitriol-water.

*SECT.*

## *SECT. LXVIII.*

### OF FOUNDERING IN THE FEET.

THIS is an exceſſive pain in the feet, whereby the horſe being ſcarcely able to touch the ground, draws himſelf in a heap; upon which account moſt people have conſtantly been of opinion, that a horſe in this condition muſt alſo be foundered in his body, and what is vulgarly called *greaſe-molten*, which immediately falling downwards, cauſes that lameneſs, and therefore in their cure have made applications to the back and loins, as well as to the feet.

To deſcribe the coffin-bone, we deſire to obſerve as follows, viz.

Its ſubſtance is fungous or ſpungy, having innumerable little holes piercing through its ſides for the paſſage of the veſſels, as alſo a great many ſmall ſinews, whereunto are implanted the ends of the tendons of the muſcles that move the lower part of the leg and foot, whoſe fibres being at any time affected, either by bruiſes, ill ſhoeing, ſtanding in the water after hard riding, while the horſe is hot, or but ſtanding ſtill in the ſtable for ſeveral days without having the feet ſtopped up, and the like; we ſay the tendinous fibres being affected by theſe or other means, cauſe the horſe to have ſuch great pain in his feet, that he can ſcarce

ſcarce endure to tread upon them, which lameneſs we call a *founder*.

This diſtemper is ſo much the harder to cure, by reaſon of the fibres lying ſo far out of reach, moſt of them running on the upper ſide of the bone (betwixt it and the hoof) and not to its bottom, ſo that the hoof growing upon the ſides, as the ſole doth at the bottom, there is great hazard; but we ſhall miſs effecting a cure if we only pull the ſole out, and do not cut part of the hoof off alſo: this is not our bare opinion, but alſo the experience of thoſe who have had good ſucceſs by following our method in curing foundered horſes, who by raſing the hoof from the coronet or top of it, to the very bottom, in five or ſix places, until they have made the blood come, and then applying their remedies to thoſe places, have made ſuch horſes ſound, which the drawing out of their ſoles would not have cured.

It is very plain, when the infirmity lies in the tendinous fibres, which are inſerted into the upper part of the coffin-bone, it cannot readily be removed by taking out the ſole, as we have already obſerved; therefore the method we have laid down ought, in all obſtinate caſes, to be complied with, as the moſt certain; and when rightly managed may, for the moſt part, be attended with good ſucceſs. Nothing can be more properly applied to the wounds made in the hoof than tar, turpentine, and hogs-lard, melted together, with a fourth part

part of ſpirit of wine, ſoaking pledgets of clean hurds in this mixture, and laying them pretty warm upon the raſures or chinks; omitting two days after the firſt dreſſing, continue afterwards to make your applications every day, until the vacant ſpaces of the hoof are filled up. The ſame application ought alſo to be made to the ſole, covering the whole foot with tow dipped in oil and vinegar beat together, which may be faſtened with a roller or pretty long piece of liſt.

The preceding method is only neceſſary in obſtinate caſes, for many times the foundering is cured only by melting pitch and tar together, with a ſufficient quantity of hogs-lard, pouring the mixture moderately hot upon the ſole, ſtuffing it up very carefully with hurds, and above them a piece of leather with ſplents. This is very good, but would be ſtill more efficacious if the ſole was pared ſomewhat thin, and half an ounce of camphor diſſolved in the mixture juſt as it comes off the fire.

## SECT. LXIX.

### OF SURBATING, &c.

A Horſe is ſaid to be ſurbated when the ſole is woren, bruiſed, or ſpoiled by any accident; as by bad ſhoeing, eſpecially when they lie too flat on the foot, or when a horſe goes too long bare-foot; as alſo by travelling on hard ways, or among dry hot ſand in hot weather, which dries the hoof, whereby the ſole becoming hard, preſſes upon the ſoft parts beneath it. If a horſe be ſurbated by ſhoeing, you may know the part that is affected by the thinneſs of the ſhoe, where it preſſes moſt; therefore it ought to be pared deepeſt in that part before another is ſet on; but if the ſhoe is not the fault, it may be known he is ſurbated by his continual hitching and moving; but by feeling his hoofs, you may obſerve them to be both very hot and dry.

The cure is very eaſy before it is attended with other accidents, and may be performed only by ſtopping up the feet with ox or cow-dung and vinegar; ſome break a couple of new-laid eggs and apply them raw to the ſoles, and then ſtop them up with ox or cow-dung; ſome uſe only hogs-greaſe and tar, moderately hot; and there are others make uſe of vinegar and ſoot boiled together; but nothing will be more efficacious, in caſe it

it be troubleſome, than firſt ſoftening the ſole with the application of unctuous things, and after that pouring in the mixture of tar and greaſe, made very warm, upon the ſole, as before directed.

## *SECT. LXX.*

### OF RETRAITS AND PRICKING THE FOOT.

NOTHING cauſes more pain and trouble than the accidents that happen to the feet by bad ſhoeing, or when ſharp ſplinters, ſtubs, &c. are ſtuck in the tender parts within the ſole; the reaſon of which cannot be very difficult to any one who is acquainted with the foot of a horſe, which conſiſts of a bone that is very open and ſpongy, and which, as has been obſerved in a preceding Section, is full of little holes for the paſſage of veſſels and ſeveral ſinews, for the inſertion of the tendons of muſcles which compoſe moſt of that ſubſtance that lies between it and the hoof; and therefore, when once theſe ſenſible parts are wounded by any accident, they commonly terminate in ulcers that are exceeding difficult to be cured, unleſs they be timely prevented. That which alſo contributes greatly to this, is the diſpoſition of the hoof, which, though it be a defence to the feet, yet, as all the other parts are incloſed within it as in a box, the artiſt is thereby often at

a loſs to find out the true place where the grievance lies; for in all parts that are covered with fleſh, a tumour will ariſe outwardly, even though its cauſe be in the bone; but the hardneſs of the hoof hinders its elevation and ſwelling, and as nature always makes her efforts in places that are weak, and the leaſt capable of reſiſtance, ſo it is not very uncommon to find a ſwelling and rottenneſs about the fruſh, or about the coronet, which are ſometimes accompanied with a ſwelling and gourdineſs of the legs and paſterns, when the cauſe is from a caries in the coffin-bone. Now it is very demonſtrable from what has been ſaid, that all ſuch effects may be produced by a prick of a nail, a ſtub, or a fleak, when it ſticks in its tender ſenſible parts, though the firſt is ſeldon attended with any bad accident excepting when a horſe's blood is diſtempered; and all that is neceſſary is only to draw the nail carefully out, and pour a little oil of turpentine, or ſpirit of wine, into the orifice, but rather a little melted wax; leaving it without a nail for ſome days, and taking care not to ride the horſe into water.

If there be any fleak or piece of nail remaining in tbe quick, which may be known by examining the nail you have pulled out, or by the continued pain with a conſtant diſcharge of matter, you may introduce a piece of dry ſponge, made in form of a tent, with a thread drawn

drawn through the end of it; this may be renewed every day, paring the ſole very thin over the orifice, that it may ſtretch and widen; for by that means, the fleak, or piece of nail, may become looſe, and have room to fall off with the matter. But if after all you find a continual ſoreneſs, and the matter that comes from the ſore thin and bloody, or yellow, viſcid, and ſtinking, you may then reaſonably conclude there is an ulcer formed, either in the bone or among the ſinews; in that caſe, it will be proper to take up the ſole, and with a razor or fleam make inciſions, until you have got a full view of the bottom of the ſore, taking care not to wound the large ſinews if poſſible, unleſs they be mortified and rotten; you need only apply dry lint dipped in ſpirit of turpentine for the firſt dreſſing, which need not be removed for two or three days, in which time the wound will be digeſted, and the blood turned to matter; and if the coffin-bone be foul, you may ſcale it by the application of ſome cauſtic medicine, as the powder of ſublimate mixed with honey, and ſpread on a pledget, or with oil of vitriol: but the beſt way is to ſear it with a hot iron, and when the ſcales are fallen off, you need only dreſs it with pledgets dipped in tincture of myrrh and aloes, until the bone is covered, laying other pledgets over theſe dipped in warm digeſtive

digeſtive of turpentine, honey, and ſpirit of wine. If any accident happens, as putting forth of proud fleſh, &c. it may be kept down with ſuch remedies as have been preſcribed in the cure of ulcers. To allay the heat and inflammation which often happens on ſuch occaſions, you may charge the hoof with vinegar, bole, and the whites of eggs; and if the anguiſh reaches higher, you may charge the leg and paſtern with a mixture of wine leys and vinegar, keeping the horſe all the while to moderate feeding.

If after all this, the horſe continues lame, and you find ſome difficulty to make a cure, you may readily ſuſpect the anguiſh of this has cauſed an ulceration in ſome other part of the foot. The beſt way is to raiſe the hoof in ſeveral places, and when you have found the grieved part, you are to treat it as an ul cer, &

## *SECT. LXXI.*

### OF THE RUNNING FRUSH.

THIS is a ſcabby and ulcerous diſpoſition in the fruſh, which ſometimes cauſes it to fall off by degrees. It may be known both by the eye and ſmell, reſembling that of old rotten cheeſe; it is not dangerous, but very troubleſome, as it cauſes a continual itching.

In

In order to the cure, you muſt pare the foot with your buttreſs, as near as you can, then waſh the part with ſpirit of wine and camphor, lime-water, or alum-water, boiling hot; then apply a charge made of ſoot, vinegar, and the whites of eggs, and waſh the parts ſometimes with vitriol-water; at laſt, when you perceive the itching gone, pour melted tar all over the frog, and keep the foot clean from dirt and filth.

## *SECT. LXXII.*

### OF THE CROWN SCAB.

THIS proceeds from a malignant ſharp matter ouzing through the ſkin above the cornet, or coronet, which frets off the hair, and hardens into a white mealy ſcab. In ſome horſes it is accompanied with a moiſture, and ſends forth a ſtinking matter like the pains and watery ſores.

The cure is firſt to ſcrape off the ſcabs gently, and afterwards waſh the ſores with copperas or vitriol-water. Some make uſe of ſpirit of wine, wherein tobacco has been infuſed, which often ſucceeds; others cure this ſcab by applying ſope and ſalt; but if it be of old ſtanding, and obſtinate,

obſtinate, the following plaſter will be of great uſe:

Take of turpentine one pound, melt it gently over the fire; when melted and warm, ſtir into it four ounces of well-levigated ſtone brimſtone. Spread it on ſoft leather, and place it on the affected place, after ſhaving off the hair.

The ſame may be applied on the legs and paſterns, if the affection ſpreads above the coronet to thoſe parts, giving your horſe now and then a little antimony among his oats, until he be cured. But if by reaſon of this ſcab, the coronet becomes ulcerated, and ſome part of the griſtle be infected, as ſometimes falls out, you are to extirpate all that is uſeleſs, and heal up the ſore, as has been directed in the cure of ulcers.

## *SECT. LXXIII.*

### OF FIGS.

THESE are ſpongy excreſcences which moſt commonly grow out on the feet of ſuch horſes as are high and hollow, with large fleſhy heels; they are cauſed by all the common accidents that happen to the feet, as ſurbating, foundering,

ſoundering, &c. and oftentimes they are the conſequence of a long-continued gourdineſs in the legs and paſterns. Their ſeat is for the moſt part at the top or ſide of the fruſh, but when they are ſuffered to grow old, or are dried up with ſtrong ointments, they take another courſe, and ſpread to the corner of the heel. They are, as moſt other excreſcences of that kind, bred and nouriſhed of the ſame matter which ſuſtains and nouriſhes the ſinewy and nervous parts, and are only to be cured by extirpation.

Therefore, if the figs be on the ſide of the fruſh, pare away ſo much of the hoof as may give you room to reach the ſore with a fleam, or lancet; then cut the ſole about the fig, and take them clean out, avoiding as much as poſſible, to wound the large blood-veſſels. Let your firſt dreſſing be of dry hurds, to ſtop the bleeding, and if it requires a ſtyptic remedy, conſult the Appendix; two or three days after remove your dreſſing, and if any part of the excreſcences be left, you may deſtroy them by applying Ægyptiacum ſpread on bolſters, or pledgets of hurds, mixing with every ounce of the ſaid ointment, half a drachm of arſenic, or corroſive ſublimate, enlarging or diminiſhing the quantity of the latter, as you find your horſe able to bear it, or the circumſtances of the ſore may require, and then heal up the ſore with

a good digeſtive, and ſpirituous applications, &c. If the fig has its inſertion into the ſinewy or griſtly ſubſtances in thoſe parts, you muſt take up the ſole, and if any parts of the griſtle be corrupted, you may cut it off with a razor, or other ſharp inſtrument. If the bone be ulcerated and carious, you may touch it with a hot iron, and then dreſs it with pledgets dipped in a tincture of myrrh, aloes, and frankincenſe, as has been directed in other caſes of the like nature; and alſo with warm turpentine and honey of roſes, until the bone is covered, afterwards heal up the ſore with ſome good digeſtive.

## *SECT. LXXIV.*

### OF HOOFS, BRITTLE OR TOO SOFT.

THESE two extremes are equally prejudicial, as they are often the cauſe of a great many ill accidents in the feet. The ſoftneſs of the hoof may proceed from a humid moiſt conſtitution, going in wet and moiſt grounds, or ſtanding conſtantly on wet litter, or from any infirmity that may bring a too great moiſture into the feet, as a gourdineſs and ſwelling in the legs and paſterns, &c. And from hence, the reaſon of dry hoofs, may be eaſily underſtood, as it muſt come

come from a contrary cauſe, viz. from ſtanding too dry, a dry and hot conſtitution, or from any infirmity depriving them of their due nouriſhment.

If the hoofs be too dry, moiſt, greaſy, and unctuous remedies are proper to ſoften them; as lard, ſheep or ox ſuet, oil olive, or rather a mixture of theſe together; but they will be very much the better if they be made into a conſiſtence of a ſtiff ointment, by adding galbanum, wax, olibanum, and ſuch like things; but an equal quantity of tar, tallow, and common honey, incorporated together, will anſwer the end very effectually, eſpecially while there is no other accident beſides a bare hardneſs of the hoof; but if the horſe's hoofs be too moiſt, they may be bathed every day with warm vinegar, verjuice, copperas-water, and ſuch like; or with theſe boil powder of galls, and let the horſe ſtand dry, keeping him at the ſame time to moderate feeding, and his hoofs will ſoon grow hard.

## SECT. LXXV.

### OF NARROW HEELS, &c.

A Horſe that is hoof-bound, and has narrow heels, has the quarter of his foot narrower towards the ſhoe than the coronet, ſo that the ſoft ſubſtance between the coffin and the hoof is preſſed upon, which cauſes the horſe to go lame; ſometimes the hoof preſſes on both quarters, but very often on the inſide only, being much weaker and more eaſily bent than the other; in ſome caſes the whole hoof is ſhrunk on the upper part, that it makes a hollow circle under the coronet, preſſing ſo hard that it intercepts the nouriſhment that ſhould paſs to the foot.

This imperfection proceeds ſometimes from a dryneſs of the hoof, but very often from ſtreight ſhoeing, and by weakening the quarters of the hoof in paring them too deep, and ſometimes it is cauſed by foundering, and other accidents to which a horſe's feet are expoſed.

The cure is, firſt, to ſhoe him with lunets, or half-moon ſhoes, or with thoſe pantoſte ſhoes deſcribed by Solleyſell, or any other that will ſufficiently preſs out the quarters; after which anoint his hoofs with the ſoftening remedies preſcribed in the laſt Section, and let him ſtand ſome days in his own dung; but if the binding and preſſure of the hoof

hoof cannot be relieved thereby, recourſe muſt be had to an operation. If the hoof be bound all round the coronet, firſt give the fire, making ſeveral raſes from the griſtle of the coronet to the ſhoe, piercing the hoof about the thickneſs of a crown-piece, repeating the ſame operation on the other ſide of the heel (for the fire ſoftens the hoof and makes it ſtretch) after which keep the foot conſtantly mollified and ſoftened, as already directed. In the moſt obſtinate caſes it will be neceſſary to take out the ſole which we mentioned before, and we think it to be the beſt and ſpeedieſt remedy, and the moſt reaſonable, which is, after the ſole is removed to cleave the fruſh with a fleam, and fix a ſplent of iron to the part, placing it ſo that it may open the heels, and keep them an inch or two wider than they were before. This is plain to ſenſe, becauſe the intermediate ſubſtance that fills up the cleft, will keep them conſtantly wide enough for the time to come, if care be taken in their ſhoeing, &c.

SECT.

## SECT. LXXVI.

### OF A FALSE QUARTER.

A False quarter is a reft or chink, in the quarter of the hoof, from top to bottom; it happens generally on the inſide, that being the weakeſt and the thinneſt, and proceeds from the dryneſs of the hoof, eſpecially when a horſe is ridden in dry, ſandy, or ſtony ground, in hot weather, or in froſty weather when the ways are flinty and hard; it is likewiſe cauſed by bad ſhoeing, and all the other accidents whereby a horſe becomes hoof-bound; for the narrowneſs of the heels, and brittleneſs of the quarter, continually expoſe a horſe to ſuch misfortunes.

This accident is both dangerous and painful; for as often as a horſe ſets his foot on the ground, the chink widens, and when he lifts it up, the ſharp edges of the divided hoof wound the tender fleſh that covers the coffin-bone; which is, for the moſt part, followed with blood, and it muſt of courſe be apt to render a horſe lame, as it is very difficult to form a re-union.

The uſual method to remedy this imperfection is, by cutting off that part of the ſhoe which lies upon the chink, that it may be wholly uncovered, then with a drawing-knife to open the reft to the quick

quick, filling it up in all parts with a rowel of hurds dipped in turpentine, wax, and ſheep-ſuet, melted together, renewing it every day till the ſeam is filled up; after it is cloſed in the top or upper part, it is uſual to draw the place betwixt the hoof and coronet, which by ſoftening the hoof and bringing a moiſture into it, cauſes it to grow the faſter, and ſhoot downwards.

There are ſome who ſear the coronet above the crack, without piercing the ſkin, juſt where the hoof begins, and with another iron ſear the chink about the middle of the hoof, which ſucceeds very well, if care be taken to keep them moiſt with applications of tar, honey, and greaſe; ſome pour aquafortis into the reft when the pain is violent, to deaden the part, making a border of wax on each ſide, to hinder it from ſpoiling the reſt of the hoof; and there are others who prepare a flat piece of wood, about an inch in breadth, but at the ſame time ſo ſlender, that it will bend like a hoop, and of a ſufficient length to go twice round the hoof, and having firſt drawn the whole length of the cleft, they apply turpentine, pitch, and ſuet, melted together, to the ſore, and faſten the hoop with pieces of liſt, or filletting. This is a contrivance to anſwer inſtead of bandage, to keep the chink united, and to prevent it from jarring when the foot is moved, which is indeed very reaſonable, for the leaſt

leaſt motion will be apt to diſcompoſe the tender ſubſtance that grows up in the cleft, and cauſe impoſtumation, which will again open the hoof: but we are of opinion, inſtead of this troubleſome way, the following method will be found more eaſy and ſucceſsful:

Firſt draw the whole length of the cleft gently with your drawing-knife, then anoint the hoof with tar, honey, and ſuet, melted together, as directed; for nothing can be more proper for the hoof; and lay a thin pledget, dipped in the ſame, along the cleft; after this take of rope-yarn, ſuch as the ſailors uſe, which is no other than hemp moiſtened in melted pitch and tar, and ſpun looſe; apply the yarn all down the hoof, beginning at the coronet and deſcend, one lay after another, as cloſe as poſſible; laying a pledget of tow behind, to keep it from fretting the heel. This ſhould be opened once in three or four days, that the cleft may be dreſſed; and to prevent any inconveniency that can happen by the opening, a thin ſtaple may be alſo contrived, with points like horſe-ſhoe nails caſt off obliquely to take a ſlender hold, the plate of it croſſing the cleft where part of the ſhoe is cut off, and the nails coming out on each ſide of the cleft on the upper part, to be rivetted as other nails. By this method a cleft in any part of the hoof may eaſily be cured, if the horſe be not very old or diſeaſed.

We

We ſhall now end this diſcourſe by introducing the cauſe of caſting the hoof, together with the cure; then proceed to a very copious Appendix of different preſcriptions, contrived by the moſt eminent authors in France, Germany, Italy, and by ourſelves.

The loſs of the hoof is occaſioned by pricks, ſtubs, foundering, ſurbating, or whatever other accident may bring an impoſtumation into the foot, whereby the whole coffin of the hoof becomes looſened and falls off from the bone; and ſometimes the coffin-bone, which is ſpongy and eaſily broke, falls off in large pieces along with the hoof; but this is a very deſperate caſe, ſince a perfect foot can never be formed after ſo great a loſs; but a new hoof may be procured with care and proper applications, if the coffin-bone, &c. be not injured.

The uſual method to procure a new hoof, is to apply to the coffin tar, turpentine, wax, oil, pitch, and ſuch things melted together; and then make a boot of leather, with a ſtrong ſole, to be laced faſt about the paſtern, bolſtering and ſtopping the foot with ſoft flax, that the tread may be eaſy, renewing the dreſſing every day until the new hoof grow. The boot is certainly very proper, but the ointment will not always be ſufficient to make a ſound and ſmooth hoof; and therefore, if the part grows fungous, which is very common, and, in a great meaſure, the cauſe of the ill ſhape and

unevenneſs of the new hoof, ſharper applications ought to be made uſe of; for which purpoſe we recommend the following:

Take of roſin, half a pound; oil olive, one pound; diſſolve the roſin in the oil over a gentle fire; take it off, and when it begins to cool add myrrh, aloes, maſtich, and olibanum, in fine powder, of each two ounces, and make it into an ointment.

Take of this ointment and Ægyptiacum equal parts, diſſolve them over the fire, and with pledgets ſoked therein dreſs the whole hoof; and having made an eaſy bandage over it, return it into the boot. If the ointment be required more powerful, you may add the powder of white vitriol or burnt alum, viz. two ounces of either to a pound of the ointment, with half an ounce of orpiment, whereby the hoof may be preſerved ſmooth, being dreſſed once a day in the manner directed.

It is the way with ſome farriers, when they obſerve the new hoof growing before the old one falls off, to pull away the old one; but they ought never to be too haſty, unleſs ſome accident happens to require its removal; for the hoof ſerves as a cover and defence to the new one, and makes it grow the more ſmooth and even, as in a mould; and nature, for the moſt part, will caſt it off of her own accord as ſoon as it becomes uſeleſs.

We

We knew a horſe in this condition that was turned into a field, where there was a ſhade for him to lie under; he lay moſt part of the time his hoof was growing, and had hay given him five or ſix times a day; and by favouring his lame foot the old hoof came off, and the new one grew with very little aſſiſtance; and though he was not young at that time, he afterwards travelled and did very good ſervice.

# APPENDIX.

THE following ſheets contain an account of all the practitioners' preſcriptions of Germany, France, Holland, Italy, &c. &c. &c. tranſlated into Engliſh.

*For a horſe that has a diſordered ſight.*

Take ſpring and rain water, of each an equal quantity, filtre the former through white-brown paper, raſp in a little Caſtile ſope and double-refined ſugar; afterwards filtre it again through another paper; uſe this with a ſoft feather two or three times a day till the eyes become clear.

*Pills to purge the brain of a horſe that has ſore eyes.*

Take agaric, common aloes, ſenna-leaves, turbith-roots, gentian, and ginger, of each three drachms, all in powder, and with unſalted butter, or ſyrup of buckthorn, make it into a ſufficient number of balls, to be rolled in liquorice powder, for one doſe; give after it a few glaſſes of wine, to make him ſwallow it the better; he ſhould faſt ſix hours before and after taking this doſe.

*A Pow-*

*A powder to diſſipate a web.*

Take garden-thyme or wild-thyme, dry one or both of theſe in the ſhade, and make a fine powder; which uſe with a feather to the horſe's eye three or four times a day.

Remember never to blow any powder into a horſe's eye.

*Another remedy for ſore eyes.*

Take celandine-juice, two ounces; white-vitriol and Florentine orris-root, powdered, each half an ounce; put the juice and powder into a pint of plantain or ſpring-water; beat it all well together till the water is in a froth; then let it ſettle all night, and filtre it through white-brown paper; to be uſed with a feather.

*Another powder for films or ſpecks.*

Take cryſtal or glaſs, levigated very fine, to which add an equal quantity of ſugar-candy, ſift it well for uſe.

*Another, very good.*

Take ground-ivy, four handfuls; common ſalt, ſugar-candy, white-copperas calcined, each an ounce; ſix new-laid eggs, boiled hard, and the yelks to be taken away; after which beat ſhells and all well together in a marble mortar, with a pint

pint of white-wine; let them infuſe twelve hours, and filtre it through paper for uſe.

*An eye-powder.*

Take common ſlate, calcined; ſnail-ſhells, kali, or ſea-wort, each two ounces; powder all theſe and ſift them through a lawn ſieve; uſe this as before deſcribed, and continue it till the cure is finiſhed.

*Sulphurated oil, for the mange.*

Tie half a pound of flowers of ſulphur cloſe in a linen cloth, and put it into three quarts of nut-oil, or for want of that, oil of olives; let it juſt boil up in an earthen pot, ſetting it on charcoal, that no flame may come at the oil; having taken it from the fire, rub all the mangy parts with your bag of ſulphur, as hot as your horſe can bear it; do this three times, or at leaſt twice a day, for a week or better, and to forward the cure, mix liquorice-powder and ſulphur, of each a pound; give the horſe two ounces at a time, morning and evening, with ſcalded bran.

*Another remedy for the mange.*

Having kept your horſe on bran, bled him, and given him two or three purges, take oil of bays, four ounces; quickſilver, two ounces; rub them together in a ſtone mortar till the quick-ſilver diſappears. Anoint all the ſcabby parts; if it

it be warm weather, dry in the ointment with the ſun; but in winter, rub it on in the ſtable, and never be too free with a hot iron, like ſome ignorant farriers, becauſe it deſtroys the roots of the hair; five or ſix rubbings once a day will effect a cure.

*Another remedy for the mange.*

Take ſweet black-leaf tobacco, roch alum, white and green copperas, an equal quantity of each; and to every half pound of each, a quarter of an ounce of gall-nuts, and as much cannon-powder; infuſe the whole in about two quarts of aqua-vitæ, for the ſpace of twenty-four hours, without ſuffering it to boil all the time; then with the ſoaked tobacco-leaves, or a piece of ſponge, apply it every day to the itchy parts; but the firſt two or three days rub the ſcabs well, before application, with a wiſp of ſtraw, that the liquor may penetrate the better.

*Another.*

Take oil of hemp-ſeed, one pound; Spaniſh flies and euphorbium, each two ounces; let them boil up together, and when cold, rub the ſcabs with the liquor three or four days following, having fretted them firſt with cow or horſe urine, in every two quarts of which, two drachms of white copperas have been diſſolved.

*Another.*

*Another.*

Take the herb called lions-foot, dried and powdered; and put two good handfuls of it into two quarts of oil of hemp-ſeed; let it infuſe over hot aſhes ten or twelve hours and then waſh the ſcabs with it.

*Another.*

Take two quarts of vinegar, white-copperas, roch-alum, each four ounces; the herb called ravens-foot, one handful (which may be omitted): boil all together to the conſumption of one half.

*An ointment.*

Take hogs-lard, two pounds; quickſilver, four ounces; rub them well together, and add to them euphorbium, two ounces; verdegris, one ounce; Spaniſh flies, half an ounce; mix and make an ointment.

*A Purge.*

Take hepatic aloes powdered, and manna, each half an ounce; ginger in powder, four ounces; rhubarb, half an ounce; freſh butter half a pound; make it into middle-ſized balls, rolled in liquorice powder. Let the horſe ſwallow after them three or four new-laid eggs, in half a bottle of white-wine; he ſhould faſt eight or ten hours after taking

ing this; and if it does not begin to work in twenty-four hours, walk him about till he does.

*Of the old reds.*

This is a ſort of mange, that ſeldom comes but on ſtone-horſes, who go to cart and plough, are full of humours, thick cheſted, have large folds acroſs the mane, eſpecially near the withers, and in the upper part of the tail. Some take it for the true mange, becauſe it is equally infectious; from the wrinkles or folds in the cheſt there iſſues, between whiles, a red humour, and ſometimes a white matter; they both ſtink and make the hair fall. In order to cure, you muſt ſhave the part as cloſe as poſſible, and rub it well with a wiſp of ſtraw, as if you would fetch out the blood, nor is there any damage if it bleeds; then take black-ſope and rub it all over like an ointment; in the ſummer time do it in the ſun, to make it penetrate the better; but obſerve to tie your horſe up ſhort. In the winter rub him in the ſtable, and dry it with a warm iron, which you may gradually bring equal to the heat of the ſun (be careful not to ſcorch the root of the hair) and this application repeated once a day, for a week or ten days, will effect a cure, after the uſual preparations.

*Tetters, or ring-worms.*

Some confound this diſeaſe with the mange, or the old reds, from both which, however, it differs;

fers; there is the live tetter, and the white tetter; and they both appear on the head, on the cheſt, and ſometimes on the body, as well as on the ſhoulders; their cauſe is a fine ſubtile blood, which inſinuates between the fleſh and the ſkin, and makes the hair fall the breadth of a crown piece, or ſometimes of the palm of one's hand. Now and then the head, and even a part of the cheſt, is left naked. A horſe in this diſorder, ſhould be a long time refreſhed with bran and honey, or with good barley, juſt cracked in a mill, but not reduced to a meal, which is better than bran. Put either in the bran or barley, morning and evening, an ounce of liver of antimony, for a doſe, and continue this for a month or ſix weeks; all this time rub the bald places every day with black-ſope, without expoſing him to the ſun, or uſing the hot iron, and three or four times during the whole ſpace, open his jugular vein; if this remedy is not effectual, uſe one of thoſe preſcribed for the mange.

*To make the hair grow, when fallen off by tetters, wounds, or ſcabs.*

Take ointment of poplar buds and honey, of each an equal quantity; mix them and rub the parts once a day for a fortnight; if it be ſummer, and the flies are plenty, put a little powder of

bitter apple, or for want of that, of common aloes, which will keep the flies from touching it.

*For the ſame purpoſe.*

Take the roots of long flat flags that grow in the rivers, and boil them to a pap; then mix with it honey and hogs-lard, of each an equal quantity, and make an ointment; which rub in ſeveral times a day. This will make the hair come again in any place, where it has been uſed to grow.

*Farther account of the foundering of horſes.*

This is a common and well-known diſtemper, which happens moſt frequently in the army, and proceeds from many different cauſes. A horſe may founder by drinking cold water, or by ſtanding ſtill when he is hot, whereas he ought to be cooled gradually, by trotting and walking till he comes into temper. The ſame may happen by putting a horſe hot into the ſtable, while others drink; to avoid which, give him a quart or two of water, in which the hands have been dipped; or water a little warm, or with a little bran; or give him a lock or two of wet hay. It is equally dangerous to ſtop a horſe when warm upon the road, or in any open place, expoſed to the wind, if he continues but half an hour.

A horſe may founder alſo by getting to the oat-crib, and eating too great a quantity, or by eating too much of beans, wheat, rye, or barley; to prevent

prevent this, eſpecially in the army, where the want of oats is often ſupplied by other grain, you ſhould ſoak your morning corn all the night, and your evening corn all the day.

Green forage that is apt to heat may alſo occaſion this malady; an accident that happens often in the army, eſpecially when rye is in the bloſſom. But founderings of this ſort are eaſily cured, provided you have recourſe to means as ſoon as they are perceived.

The foundering that ſwells is the moſt dangerous, becauſe it comes by degrees, and may be long before it is diſcovered. When a horſe that has been long in the ſtable limps upon one of his hind-legs, and can neither ſtand upon it nor lie down, he may be concluded in this diſtemper, which is occaſioned by the contraction of the nerves, and difficult circulation of the blood. Fat heavy horſes are hard to cure, and ſcarce ſix in a hundred, whatever care is taken to look after them, but feel the effects of this diſtemper as long as they live.

To prevent this ſort of foundering, it is not ſufficient to remedy the immediate cauſe of his lameneſs; you muſt endeavour to remove whatever may affect the other legs and feet, fortifying them from time to time by rubbing the nerves with oil of turpentine and brandy, beat together in equal quantities, or by bathing all the leg, from top to bottom,

bottom, with leys of wine, uſing afterwards cow-dung fried with hogs-lard and vinegar. If a horſe continues long lame, and his other legs ſwell, have him well ſhod, and his feet pared, continuing to put the cow-dung into his hind-feet, and to rub his legs and nerves from time to time with oil of turpentine and brandy, or leys of wine, which are the only remedies in this diſorder.

A foundered horſe is eaſily known, by drawing back from the rack or manger, bearing upon the reins of his halter, walking with difficulty, and bending his fore-knees with pain. When you make him go backwards he drags his feet, and ſcarce can lift them from the ground; his hind-feet move with violence, and fall down as ſoon as they are up.

We have before ſaid that this diſeaſe proceeds only from a chillineſs in the blood, which hinders the circulation through the liver and lights; to which we may add, the nerves ſtiffen, and have ſcarce any motion; that the horſe eats little, and preſently falls back from his manger; and when the diſtemper is of long ſtanding, he moſtly lies down. To know it certainly, obſerve whether the hair frizzles and curls, as it were, on the inſide of his knees, the footlock, the hams, and near the flat of the thigh. A man muſt have great ſkill to cure a horſe perfectly in this condition.

If

If it be a draught horſe, which may ſtill ſerve for the plough, take the two ſhoes off his fore-feet, and pare his hoofs almoſt to the quick, taking care, however, not to draw blood, then ſhoe him as before; trot till he begins to ſweat, and if you are near any water, open his neck-vein, and ride him up to his knees, catching the blood, to the quantity of two quarts, in a pot; after he has bled enough, put a handful of ſalt into the pot, and ſtir it well with your hands, then give the horſe to drink, with a horn, as ſoon as poſſible. Take afterwards a quart or three pints of oil of turpentine, and as much brandy, beat them together, and rub with this mixture down the fore-legs, upon the nerves, and acroſs the loins, all with the utmoſt expedition; the horſe being tied ſhort with four reins, two to the manger and two to the rack, to prevent his hurting himſelf; the more he ſtruggles the more hope is there of a cure, and his uneaſineſs will not laſt above half an hour; in caſe he be unruly before you have done rubbing his legs and reins, pinch his noſe till you have finiſhed, and then leave him at liberty to do as he pleaſes. Let ſomebody ſtand behind him with a whip, to prevent his doing himſelf any miſchief. When he has done ſtruggling, rub round the crown of his hoofs with good oil of bays, and fill with it the two fore feet that are pared, keeping it with tow and ſplinters.

The

The next day, at the ſame hour, be ſure to give him a good purging clyſter; if you ſee no amendment repeat the ſame remedies, without bleeding, giving him, in the room of blood and ſalt, two ounces of good Venice treacle, an ounce of monks rhubarb, and half an ounce of ſal-prunellæ, all mixed in a large bottle of wine; likewiſe rub his legs and acroſs his reins, adding the oil of bays as before directed.

Clyſters ſhould be repeated morning and evening, and every other day give the draught as above. If he be not well in nine or ten days, conclude him incurable.

*Another remedy for foundering.*

When a horſe is foundered, ride him to a river or pond, or any other water, but a river is beſt, and ſtill the better if it has a mill on it, and lead him into the mill-pool, above his thighs, and let him ſtand there an hour, with his head againſt the ſtream, then walk him till he ſweats, and rub his legs and reins well with a wiſp of ſtraw; then you may bleed him freely from his neck-vein, and rub the nerves of his legs well with blood, mixed with brandy. Afterwards put him in the ſtable, and rub round his hoofs with oil of bays, which bind on with tow and ſplinters; for want of oil of bays, uſe hogs-dung, fried in hogs-greaſe, vinegar, and a handful of ſalt, this will keep the foundering out of the hoofs. You muſt keep him to bran

bran and water for the fifteen following days, and the next day, after bleeding, adminiſter the following draught:

Take four large heads of garlic, picked and pounded, with a handful of ſalt; dilute this with a bottle of white wine; repeat the draught three or four days running. If the horſe be bound, as is uſually in theſe diſtempers, and his dung looks as if it had been burnt, be ſure not to neglect your clyſters.

*Another way of treating a foundered horſe.*

If you perceive your horſe foundered in the morning, walk him in the day; or if in the evening, walk him the ſame night; becauſe in this diſtemper no time ſhould be loſt, unleſs you would run the hazard of making a perfect cure; if it be in the ſpring when you can have the leaves, or the tops of the wild vine, make him eat as many of them as you can, and if you can keep him upon this and ſcalded bran for ſome days, it will do great ſervice. You muſt give him bran-water during the whole courſe, and often put reſtringents into his fore feet.

Theſe reſtringents may be compoſed of white-wine vinegar, the whites of eggs, dragons-blood and ſalt, powdering all that require it; when muſcles ſeem too ſtiff, you may ſupple them with the following:

Take raw eggs and beat them as if you would make a biſcuit; then take oil of turpentine, cow-dung, and wine-vinegar, in proportion, mix all together, and rub the legs with this very well along the muſcles every ſix hours.

It is not ſurprizing that many foundered horſes are the worſe for it all their lives, ſome more ſome leſs, according to the ſtrength of the diſtemper, becauſe moſt people content themſelves with internal remedies, without regarding the feet and legs.

*Of melted greaſe.*

This diſtemper often accompanies foundering, and few horſes that have them both are ever cured. It is ſaid melted greaſe is, when there is, or at leaſt ſeems to be, pieces of fat intermixed with the dung of a horſe; ſome ignorantly believe that this fat comes from the kidneys; but how ſhould the fat of the kidneys get into the bowels? We will not diſpute but that all the internal fat may be over-heated; but what is voided with the dung comes off the guts, and is only a greaſy filth, that ſticks on their inſide, and is looſened by the heat. This is proved by what may be ſeen in cleanſing the bowels of any animal at all. If the diſcharge of this matter cannot be ſtopped, it is all over with your horſe; for the nutriment he takes, cannot ſlide through the bowels, which are no longer capable to receive it; ſo that the horſe looſes

looſes his appetite, and frequently dies. You muſt give him nothing that may heat by the way, either of diet, draught, or clyſter; and inſtead of wine, which is common in horſe-phyſic, uſe only whey, or if that cannot be got, water in which lettuce, beet, purſlain, ſuccory, or other herbs of the ſame quality have been boiled; or for want of the herbs, water ſoftened with bran or meal. Let the draughts be much the ſame as for foundering, adding only a quarter or half a pound of honey; refreſhing clyſters ſhould be often repeated. Though this diſtemper is ſeldom curable when joined with foundering, yet when alone there is room for hope.

*Another way to know when a horſe's greaſe is melted.*

A horſe whoſe greaſe is melted, looſes his appetite at once, appears very ſorrowful, and often is ſeized with a fever. To be certain look at his dung, and if you find it ſlimy, or wrapped in a ſort of membrane, or melted fat, it is a proof that the fat is over-heated within the bowels, and comes away with the dung. A horſe in this condition muſt be ſoon relieved, or not at all. Such a horſe, from the very firſt, deſires always to lie and be at reſt, which is what deſtroys him. You muſt walk him gently, therefore, from time to time, either in the ſtable in winter, or in the

ſun in ſummer; in order to prepare him for taking the remedies already mentioned.

Avoid bleeding, in this diſeaſe, becauſe that would chill all the melted greaſe within him; but take three pints of beef or pork brine (the former is beſt) and a pint of the juice of rue, incorporate the whole together, and boil it a quarter of an hour; give it luke-warm, and if the remedy be taken in time you may hope for a cure from it.

When this cannot be got, take two or three quarts of the blood of a ſheep that is juſt killed (if poſſible let it be a ram) with a handful of ſalt, which you muſt firſt diſſolve in warm water, and give the whole as ſoon as poſſible.

*Another remedy for a horſe whoſe greaſe is ſuppoſed to be melted.*

Take Venice treacle and manna, of each two ounces; ſenna-leaves and ſal prunellæ, each four drachms; gentian-root, one ounce; cut the root into thin ſlips, and infuſe the whole in a bottle of wine for twenty-four hours; ſtrain it through a coarſe cloth, and give it the horſe; this is good for many other diſeaſes.

*The ſtag-evil.*

This diſtemper is ſo called, becauſe horſes afflicted with it are like ſtags that have been long hunted, and while they are heated have paſſed ſome

ſome river, which brings a ſtiffneſs in their neck, body, and legs; ſuch a horſe opens his mouth with pain, his jaws being ſo locked together that he cannot receive any nouriſhment, and you may ſooner break them than force them aſunder. The ſole cauſe, therefore, of this diſeaſe, is being over-worked, and then ſuffered to ſtand ſtill without a gradual cooling. When it comes alone, however, without melted greaſe or foundering, there is hope of a cure, by treating it in the following manner:

Firſt, take oils of ſpike and turpentine, equal quantities adding a double quantity of oil of bays; put theſe in an earthen pot, and diſſolve them over a gentle fire, ſtir the compoſition till it is cold, and then rub with it both ſides of the jaws, eſpecially at the joints a little roughly, that it may the better penetrate; then put a wooden wedge into the horſe's mouth, and ſtrike gently upon it, for fear of breaking the jaws, and if he opens them ever ſo little, let half an ounce of laudanum be injected down his throat, and if that cannot be done, probably he will die with hunger, rather than with thirſt, becauſe he cannot chew; but in order to oblige him to take ſome nouriſhment, ſet before him water thickened with bran or meal, ſome of which he may ſwallow, by ſucking it down his throat. If his teeth continue ſhut, and the ſpaſms of the muſcles

muſcles of his face cannot be relaxed, he certainly will die of hunger.

In this diſtemper give clyſters, two or three times a day; and if you can bring him to open his mouth a ſufficient width, good nouriſhment ſhould be preferred to phyſic; panada, given with a horn, is very proper in this caſe; you may make it with half a dozen ſtale biſcuits, or an equal quantity of dry bread powered, and boiled up in the manner of children's pap; put to it half an ounce of cinnamon, half an ounce of nutmeg, two ounces of liquorice-powder, or powdered ſugar, and mix the whole together; this will ſtrengthen the horſe very much. When he is very low you may put five or ſix yelks of eggs into the panada, every night and morning till he comes to eat; rubbing him every day acroſs the reins and down the legs with brandy and oil of turpentine, in equal quantities, according to the directions for a foundered horſe.

*A medicine for the ſtag-evil.*

Take Venice treacle and cordial powder, of each one ounce; manna and ſugar, of each two ounces; mix them together in a bottle of wine, and let the horſe take two of theſe draughts every day, giving a clyſter between them; whatever you give him by the mouth, take care not to raiſe his head too much, but rather ſink it from time to time

time, for raiſing the head will ſtupify, and may poſſibly make him fall, in which caſe it would be difficult to get him up again. Nor muſt you force him to riſe, but rather ſurround him with dung, in order to keep him warm. Uſe the ſame means to open his mouth when he is down as when he is ſtanding, with as little violence as poſſible; ſome horſes have continued a fortnight in this condition and yet have done well.

*Of the gripes or colic.*

This diſeaſe reſembles that of the ſame name in human bodies, and has much the ſame cauſe; but we ſhall introduce it, with ſaying a little concerning the vives.

If you are in a place where remedies may be had, walk your horſe till he is a very little warmed; and then beat his glands gently with the handle of a hammer, or any other piece of wood, without opening them; after that upon the jugular vein; then take four ounces of conſerve of elder, and diſſolve it in a bottle of wine, with two powdered nutmegs and a quarter of a pound of ſugar. When your horſe has drank this, wrap him up cloſe, and leave him to ſweat. Two ounces of the ſeeds of garden creſſes (in caſe the elder conſerve cannot be got) may be infuſed a quarter of an hour in a bottle of wine, and given for the ſame purpoſe, as hot as poſſible. For want of both,

take

take four ounces of Venice treacle, with a ſmall handful of ſalt, and diſſolve them in wine, to be given as the others.

When the vives are accompanied with the gripes, the ſame remedy will operate, if you add to the draught an ounce of ſal prunellæ; if it be ſtill ineffectual, add four ounces of oil of olives, and half an ounce of oil of petre. If the horſe continues in pain it is a proof the paſſage of his bladder is ſtopped, or that his urine is detained in the reins; in the former caſe, take a piece of whale-bone, as long as your arm, and reduce it to the ſize of a wheat ſtraw, make it very round and ſmooth, with a little knob at the end, to which faſten a bit of fine muſlin; dip this in ſweet oil, and having dextrouſly drawn the horſe's yard out of the ſheath, thruſt it up the paſſage to the bladder; if this does not bring out any water, it proves the diſorder to be in the reins; but if a little comes, it ſhews the bladder to be full. Let a man then rub his hand and arm up to the elbow with oil or butter, and thruſt it up the horſe's fundament, in order to extract all the dung out of the great gut, taking care not to ſcratch him with his nails. The gut being empty he may carry his hand to the bladder, which if he finds it ſwelled, he muſt gently preſs, and ſo oblige the horſe to ſtale; but if nothing is found in the bladder, it proves the water to be ſtill in the kidneys.

If

If the draught, with oil of petre, gives the horſe no relief, but he continues in great pain, lying down and riſing every inſtant, take a large quantity of blood from his neck-vein, and then give him the following remedies, viz.

Take a bottle of antimonial-wine, in which put a quartern of nut-oil, and an ounce of oil of amber; for want of the oil of amber, take four or five hundred wood-lice, dried and powdered, and uſe them in its room; give this for a draught. It would be alſo proper to adminiſter a clyſter twice or three times in one day, in which there ſhould be an ounce of rectified oil of amber, and as much oil of petre. If you cannot get theſe, uſe two ounces of ſal prunellæ, or a large handful of common ſalt; and if this remedy does not cure your horſe, depend upon it no other will.

*Another remedy for the gripes.*

Take a handful of rue-ſeed, pound it in a mortar, and mix it in a pint of warm white-wine, which give for a draught; immediately after walk your horſe an hour or an hour and a half, without ſuffering him to lie down, which in this diſeaſe he will continually endeavour to do, for which reaſon you muſt give him no repoſe till his pain ceaſes.

*A remedy to make a horſe ſtale.*

When a horſe cannot ſtale take black-roſin, two ounces, in powder; mix it with two yelks of eggs, and add by degrees a pint of ale, and give it the horſe warm; you may walk him an hour or two after taking it.

*Another.*

Take parſley-root, or the heart of a leek, of the greateſt length you can get, and endeavour to thruſt it into the orifice of the yard; this alone is ſufficient in a ſimple retention.

*Another remedy.*

Take ten or twelve radiſhes, in proportion to their ſize, with their greens on, boil them in three pints of white-wine, to half the quantity; ſtrain the liquor through a fine cloth, and give it warm to the horſe; when he has taken it, thruſt a ſlender piece of mallows-root up his yard, as far as you can, which may be near half a foot. A piece of yellow wax-candle, well greaſed, may ſerve when the mallows cannot be had.

*To provoke urine.*

Take two or three large heads of garlic, cut them and bruiſe them in a mortar, with oil of olives, till

till they come to the conſiſtency of an ointment; with which rub the teſticles, and the naked yard of the horſe, repeating it every quarter of an hour, to the number of five or ſix times; if the retention be not extraordinary, this will cure it.

*For the gripes.*

Take green-aniſe, two ounces; oil of olives, a pint; white-wine, a bottle; bruiſe the aniſe, mix with it the oil and wine, and give the whole to drink warm, walk him two or three hours after, and let him not drink for twelve hours; then give him warm water, with bran or meal.

*A clyſter for the gripes of every kind.*

You muſt give no reſt to a horſe that is attacked with the gripes, but keep him moving till he takes the following remedy:

Boil good wheat-bran, thoroughly, in a ſufficient quantity of water, which ſtrain afterwards through a linen cloth, and put to it a quartern of oil of olives, a quartern of honey, ſal prunellæ and Barbadoes oil, of each one ounce. Adminiſter this by way of clyſter, as hot as the horſe can bear it without hurt, and if the pain continues four hours after, make him take the following:

*A drink.*

Take Venice treacle, one ounce and a half; ſal prunellæ and oil of petre, each one ounce; oil of turpentine, half an ounce; ſweet oil, two ounces. Mix them all well in a pint of warm wine; if this does not effect a cure, repeat your clyſters two or three times a day, till you perceive your horſe better; and towards the end of the fit uſe clyſters compoſed only of bran-water, honey, oil, and common ſalt.

*An Italian medicine for the relief of broken-winded horſes.*

Take three pounds, two pounds and a half, or two pounds of fat bacon, in proportion to the ſize of the horſe; mince it ſmall, and ſoak it twenty-four hours in a ſmall quantity of warm water, changing the water every two or three hours; then take a handful of ſmallage, cut it fine, and beat it up with the bacon. You muſt have a pint of ſweet oil to dip this mixture in, and then give it to the horſe in a morning after he has faſted all night; get upon his back as ſoon as he has taken it, and give him an airing for three or four hours. Repeat this preſcription ſix times in twelve days, keeping him all the time from hay, or wetting what hay you give him. His oats ſhould be be-

dewed

dewed with the urine of a ſound hearty man, and afterwards mixed with the following powder:

*A powder to ſprinkle among the oats of a broken-winded horſe.*

Take three or four pounds of ſmall ſhot, caſt in water, and beat it in a large mortar till it is reduced to powder; then take the ſame weight of flowers of ſulphur, and mix with it in an earthen pot; heat a ſpit red-hot and thruſt it into the pot, and when the compoſition has taken fire wait till it goes out of itſelf. The powder that remains at bottom you muſt pound over again, and ſprinkle about a thimble-full of it, night and morning, over his oats; this will relieve a horſe very much in ten or twelve days, but radically to cure him is impoſſible.

*Another remedy.*

Take ſweet oil and brandy, a pint of each; give it for a draught three mornings running, the horſe faſting ſix hours before, and as many after taking it. A man muſt be a good judge, who can tell on the fourth day, whether your horſe is broken-winded or not; at leaſt, if he be not very bad indeed.

*Another remedy for a broken-wind.*

Take three large handfuls of the herb called ox's-tongue, and boil it in ſix or ſeven quarts of wine,

wine, till it is half waſted; give the horſe about a quart every other day, keep him warm, litter him well, and let him faſt three hours before, and as long after, taking this draught. Give him a good handful of rye, and let his hay be all ſoaked in water; wheat-ſtraw is much the beſt for him, if you can get a ſufficient quantity; ſprinkle all his oats with freſh human urine. If you repeat this courſe once a month, it will make a broken-winded horſe do a great deal of buſineſs.

*Another.*

Take figs, either freſh gathered or dry, and pound as many of them as will yield you half a pint of juice, by expreſſion, which mix with good wheat-bran; give the whole quantity evening and morning, and continue it for ſome time, obſerving to wet the bran with warm water. The following draught ſhould alſo be given for ſome days:

Take three ounces of fine ſtarch, and half a pound of boars-lard, diſſolve them in a full quart of water, ſtirring it well, and give this to drink every morning, till the horſe mends; mix a little honey in his common water, and if he will not drink, keep him thirſty till he does drink, then uſe the following fomentation:

Put two or three handfuls of roſemary branches, flowers and all if they are in ſeaſon, in a new earthen

earthen pot; fill the pot withbrandy, cover it close and set it over a gentle fire till it be ready to boil; then put your horse's head into a bag, with holes at both ends, and fumigate it with the steam of the pot from underneath, which will make the horse sweat, and transpire the ill humours that may affect his lungs; fumigate him in this manner, morning and evening, for eight or ten days, and if he is not perfectly broken-winded, you may hope for a cure; if he is, this will do him great service.

*Another.*

Shut your horse in the stable a fortnight; then bleed him; feed him only with chaff and scalded bran, and let his drink be fair water warmed. If he has a great cough, take an ounce and a half or two ounces of oil of bays, and tie it up in a bag for him to hold in his mouth. Let him drink freely whenever he is dry. You must use this as long as the cough continues; and when that leaves him, give your horse the following composition:

Take sweet oil, half a pint; common aloes, two drachms; saffron, half an ounce; put the whole well mixed into a bottle of wine, and give it for a draught. Let him fast four hours before and as many after taking it. Then take a bottle of white-wine, and put in it six large onions, boiling them to a pap over a gentle fire, without flame, and till the

the water in them is all evaporated. Give this with a drenching-horn three days after the former; then let him reſt three days, and let his next draught afterwards conſiſt in theſe ingredients, viz. nutmegs, cinnamon, ginger, and long pepper, each one ounce; put them all together in a bottle of white-wine, with four ounces of oil of olives; heat the whole before you give it the horſe, who ſhould be walked two hours before, and two hours after taking it; in twelve days time repeat the firſt of theſe draughts, and if you are deſirous to preſerve your horſe, let him drink nothing but blanched water, and never eat any hay unleſs obliged to it by neceſſity; when that is the caſe, ſee it be good and clean, and moiſten it a little with water.

*To preſerve a horſe's wind when going to perform a race.*

Take dry teazles, ſuch as the cloth-workers uſe, reduce them to powder, and ſift the powder well. Give the horſe half an ounce of it at a time, night and morning, among his oats. This remedy, ſimple as it ſeems, is excellent for the relief of a broken-winded horſe; and to preſerve the wind of a horſe that is not affected, give him a doſe of it whenever he is to take a long heat.

*Another*

*Another alleviating remedy for a broken-winded horſe.*

Take lead, and file it to as fine a powder as poſſible, of which give an ounce at a time in the horſe's oats, after they have been ſoaked in freſh human urine; or for want of that, fair water. This remedy continued, will do much ſervice. Obſerve, in general, never to give any thing dry in this diſtemper.

*A medicine to keep a broken-wind from growing worſe.*

Take half a large handful of green broom in bloſſom, chop it ſmall, and mix it with your horſe's oats, after you have wetted them with human urine. Deprive him of hay, and give him ſtraw in the room of it, wetting it night and morning, to make it the freſher; for many horſes will not eat it when kept wet from one day to another. While you give him the broom, which ſhould be for eight days running, lead him once or twice a day to the water, and make him ſwim, without ſuffering him to drink, eſpecially on the day when you would have him appear ſound-winded.

*Another to preſerve the breath of a ſhort-winded horſe.*

Take pimpernel and creſſes, of each a handful and an half, pound them together in a mortar, and having put them in a bottle of wine to infuſe a few days, give the whole for a draught. This is a very good remedy.

*Another for the ſame purpoſe.*

Take broom-flowers, and white-thorn leaves, the freſheſt and tendereſt you can get, with the yelloweſt leaves of ſallow and colts-foot, of each an equal quantity. Chop the whole very ſmall, and make the horſe eat as much of it as poſſible in his bran. Keep your horſe on this diet, and a little ſtraw between whiles, and his wind will appear good.

*Another for a broken-wind.*

Diet your horſe for a fortnight, with ſtraw, chaff, and bran, and keep him from work, and four days after give him the following pills:

Take agaric, aloes, round birthwort, of each half an ounce; elecampane, flour of brimſtone, common honey, liquorice powder, of each one ounce. Pound all theſe drugs, mix them with freſh butter, and make them into balls; roll your balls in ſugar, or liquorice powder, and give them every

every day, eight or ten days running. This will very much relieve.

*A powder to mix with the oats of broken-winded horſes, or horſes that have an inveterate cough.*

Take a bar of iron or ſteel (iron is beſt, though ſteel be moſt uſed) and heat it at the forge, till it comes out almoſt white; then take a large piece of ſulphur, thruſt your iron againſt it, and as it melts, let it run into a pail of water. When the intenſe heat is over, put it again into the fire, till it is as hot as before, and continue thus to put it to the brimſtone, till you have melted four or five pounds, more or leſs, as you have occaſion. Three pounds of ſulphur ſkilfully managed, will melt five or ſix pounds of iron or ſteel. The ſulphur falls into the water with the metal, but you muſt leave it there, becauſe when you take out what is melted, you muſt dry it, and reduce it to powder in a mortar, and paſs it through a fine ſieve, ſulphur and all; take an ounce, or an ounce and a half of this, according to the corpulence of your horſe, and mix it with his ſcalded bran. Some give this for a month, or even ſix weeks together, without perceiving any effect; but this ſhould not hinder them from continuing it two months upon occaſion, by which time it will certainly do good. You muſt not throw away the water in which the metal was melted, but

give a quart of it to the horſe every morning, by way of draught. There have been thoſe who have uſed file duſt for the ſame purpoſe, but it would be long before one could get a ſufficient quantity, nor is that ever ſo fine as this powder, which therefore, is a more effectual and ſovereign remedy.

*Balls for a broken-wind.*

Stamp eight heads of garlic, and two ounces of horſe-radiſh, in a mortar, then add to them three ounces of flour of brimſtone, and make them into a maſs, with a ſufficient quantity of ſweet oil; divide the maſs into four balls, and let the horſe have one of them in the morning, and another in the afternoon.

*Another.*

Take galbanum, and gum ammoniac, of each half a pound, let them be well pounded in a mortar, with a quarter of a pound of flowers of Benjamin, adding, by degrees, ſweet oil, till it becomes a paſte fit to be made into balls, weighing each two ounces. Give one in the morning, and one in the afternoon, two hours after watering.

*Heaving of the flank.*

Horſes that are attacked with this diſtemper, ſeem as if they were broken-winded, which often makes their caſe ſeem doubtful; ſometimes occaſions

ſions law-ſuits, and leads ignorant practitioners into the uſe of wrong means. Dealers have been obliged to take their horſes again, through the ſuſpicion of the buyers, who were unacquainted with the diſtemper we are treating of; and others have ſold horſes that have been really broken-winded, under the notion of their being only over-heated, and newly taken up from graſs. This accident often happens to horſes that have been over-rid, or have eat what is unwholeſome, as damaged hay, duſty or muſty oats, or ſuch drugs as the jockeys give them to make them fat of a ſudden. Theſe drugs ſeem at firſt to do them good, but they only heat their inſide, make them infirm, and bring on the heaving of the flank. It is known by the wheezing of a horſe, and the continual motion of his flanks; his bowels are tucked in, and ſo drawn together, that he may become burſten. The cure ſhould be ſpeedily undertaken, and in the following manner:

*A remedy for the heaving of the flanks.*

Beat up a pound of bacon into a lump, and ſoak out the ſalt in river water; then take flour of brimſtone, honey of roſes, powdered aniſeeds and fennel-ſeeds, of each two ounces; roch alum one ounce.

Make this into ten or twelve pills, each as large as a nut, in the following manner: when your bacon

bacon is well ſoaked, cut it in very ſmall pieces, and pound it in a mortar, and then add the drugs above mentioned; after having powdered the fennel-ſeeds and alum with a ſufficient quantity of barley-flour, make the whole into pills, and let the doſe be more or leſs, in proportion to the ſtrength of the horſe. Two or three of a morning, is the quantity neareſt a medium. The horſe ſhould be tied up five or ſix hours before taking them, and three or four after. You muſt feed him only with ſcalded bran; and if the doſe preſcribed is not ſufficient, repeat it in double the quantity, till the beating of the flank abates. Above all, take care to give him airings, without any fatigue.

*Another for a heaving of the flanks through fatigue.*

Take juniper berries, and wild ſage dried, of each two ounces; bay berries, and gentian-root, of each three ounces; ſaffron, half an ounce; having powdered the whole, tie it up in a linen cloth, and put it into a pail of water, which you mean to give the horſe to drink; after he has drank, fill the pail again, and leave the drugs to ſteep in this manner; the compoſition will ſerve two days, and then you muſt put in freſh, till the horſe is well. During the whole courſe, put the following among his oats or bran:

Fenugreek-ſeed, and the root of mezereon, of each one pound; gentian-root, two pounds; the herb

herb ſavin, dried, half a pound; powder and mix theſe, then put a ſpoonful of the powder into his oats or bran every time he eats, pouring on water that you may mix them the better; it will ſoon produce very good effects.

*Another for the beating of the flanks, occaſioned by ſtraining.*

The beating of the flanks occaſioned by a ſtrain, whether through a hurt on the part by falling, or by leaping a hedge, or a gate, is very dangerous, and will kill a horſe without ſpeedy relief.

You muſt obſerve if there be any ſwelling or bruiſe, which the horſe will generally point out himſelf by turning his head that way; when this is the caſe, loſe no time, for the place may ſuddenly mortify; to prevent which, apply the following remedy:

Take bole-armenic, greater comfrey-root, and black pitch, of each four ounces; ſal ammoniac, dragons-blood, and frankincenſe; of each two ounces; wheat flour half a pound; vinegar, two quarts; dry the drugs well, and having powdered them, take ſix whites of eggs, and put them in a large bowl, in order to mix the powder and the vinegar with them; apply this hot to the part, after having ſhaved the hair, and cover it with a ſheep-ſkin, bound on with leather thongs. Let it remain twelve hours, and repeat the application two or three

three times, till the horſe is relieved. In the mean time give him ſome cordials, in order to ſtrengthen him, and drive the diſtemper out; give him no oats, but ſcalded bran, and a little ſtale rye bread, for that which is new would clog up his teeth. A horſe treated in this manner, will very ſoon be out of danger.

*A remedy for a horſe that is over-heated and ſtraitened in the flanks.*

Take a pint of ſweet oil, and as much milk, freſh from the cow; mix them together, and give them to the horſe a little warm; then walk him in the air a quarter of an hour, and keep him from eating two hours after as well as before taking it; water him with fair water, as ſoon as he comes back into the ſtable. The two hours being expired give him a feed of ſcalded bran, but no oats; repeat the remedy five or ſix times, once in two days; and let his feed all the time be the ſame. A little barley, juſt broke in the mill, is very good for him in this caſe, and will contribute to a ſpeedy cure.

*Cheſt-foundering.*

This diſtemper is much like the former and proceeds from the ſame cauſes, which makes ſome perſons call them both a heaving of the flank, without any diſtinction. A horſe may contract it by

by being lame behind, whether in the haunch, the leg, or the muſcles, or from any long fatigue either in the army or elſewhere. A horſe that is delicate may avoid eating through mere indifference, till his bowels are contracted, and he looks lank and thin like a grey-hound; a mare may be ſooner brought to fill out again, than a horſe, by getting her covered, which is a ſecret that dealers make uſe of, in order to ſell their mares, but as this ſtratagem is not univerſally received, the moſt ready cure is by the following medicines:

*A remedy for a cheſt-foundered horſe.*

Refreſh your horſe firſt with ſcalded bran, depriving him of oats; ſome days after bleed him in the neck-vein, next day give him a purging clyſter, and in the evening, the purge as in this Appendix. Feed him with the beſt hay you can get, and whenever you give him bran, take a pail half full of it, and then fill it with water; having mixed them well to blanch the water, you may diſſolve in it half a pound of honey each time; this water will ſerve but once, becauſe it will grow ſour in a night's time, eſpecially in ſummer. If the horſe will not eat the bran that is at the bottom, after he has drank the water, take it out in balls, and put them into the manger, with a few handfuls of beans, to provoke his appetite. You may alſo give him beans to make him drink the

water, but they muſt be the ſmall marſh beans, ſuch as are thrown to pidgeons. During this courſe, rub his flanks with good oil every evening and morning, and endeavour to looſen, as it were, the ſkin of his belly with your hand, gently, and by little and little, taking care not to hurt him. It muſt be owned that this is a work of time, but it will certainly cure the horſe in the end. The horſe ſhould have ſeveral purges during the courſe of this diſtemper.

*Another for the ſame diſorder.*

Treat your horſe as before directed, and in order the ſooner to make him belly, take vine-branches, and reduce them to aſhes; when you have four ounces, ſift them through a ſieve, and beat them up in a bottle of wine. Let the horſe drink four ounces of ſweet oil, and then give him the wine and aſhes through a horn; repeat this remedy every other day, till the horſe apparently recovers, and never neglect your clyſters when his dung is hard and black, but when that is in good order, clyſters are no longer neceſſary.

When you cannot get vine-branches, uſe elder-ſhoots in the room of them, but vine-wood is abundantly the beſt. Take great care you do not rub the ſkin of the belly too roughly, for you cannot here go too tenderly to work.

*Worms*

*Worms in horſes.*

There are many different kinds of worms, and as many different remedies proper to deſtroy them. To come at the knowledge of this diſtemper, you muſt obſerve, that a horſe who has worms, grows meagre, and his hair curls and frizzles, he looks dull and melancholy, and falls away viſibly, give him whatever you will. To be more certain of this caſe, examine his dung, and you will ſometimes find it dry and powdery, and mixed with worms that get looſe from the great gut; ſometimes they keep behind, but ſtill the dung is dry, and will not hang together. Another certain ſign of worms is, when the horſe appears very uneaſy, and every moment directs his head to his belly, ſometimes on one ſide, ſometimes on the other, as if he would ſhew what ailed him. In this caſe it is neceſſary to rub the hand and the arm up to the elbow with oil, and introduce it into the fundament of the horſe, firſt cutting your nails very ſhort, and taking care not to ſcratch the great gut as you pull your hand back, when you have got in it all the worms you can find. As for thoſe that are in the other bowels, where the hand cannot poſſibly be admitted, you muſt get rid of them by the following remedy:

*Prescription for worms.*

Take Æthiops-mineral, three ounces, and the same weight of fresh butter, to make it up into pills, which you should roll in liquorice powder, and give the horse fasting, keeping him so three hours after; in a short time the worms will die and come out with the dung.

*Another remedy.*

Take fresh-drawn linseed-oil, four ounces; gentian root, powdered, and flour of brimstone, of each one ounce; mix the whole in a pint of white-wine or ale, and infuse it in a pot, close stopped, over hot embers, for a draught. Give it the horse warm, and let him fast two hours before and as long after taking it.

*Another.*

Take Succotrine aloes, agaric, and scammony, of each one ounce; butter without salt, or hogs-lard, eight ounces; make the whole into pills, with cordial powder, at your own discretion, in order to give them a firm consistence. The use of these will clear a horse of the worms.

*Another.*

Take crocus metallorum, in powder, and every time the horse eats oats, put an ounce of it among them;

them; continue this for ſome days; either of theſe remedies will do the buſineſs.

*Swelling of the teſticles.*

This diſtemper uſually proceeds from ſome ſtrain in working, or from the horſe being continued too long in the ſtable, or from his putting one leg over any bar, and being checked by the halter, or from any other accident that confines a horſe, makes him kick and fling, and bruiſe his teſticles. There is no other way of knowing this diſtemper but by ſome outward ſwelling upon the part. The coming down of the teſticles proceeds from the ſame cauſes, with this difference only, that it is a long time in diſcovering itſelf, whereas the other may come in one night.

*A pultice for the ſwelling of the teſticles.*

Take about four ounces of the juice of leeks, two ounces of common ſalt, four ounces of the ſtaleſt leavened dough, two ounces of the juice of rue, two handfuls of rye-flour, and about a quarter of a pound of hogs-lard, ready melted; boil the whole with a ſufficient quantity of vinegar to make a pap, about as thick as that for children, and apply it ſpread thick like a pultice.

*Another.*

*Another.*

Take bean-flour and vinegar, and make a pap as before; add a little falt, and uſe it as the other.

*Another.*

Take leeks and the crum of white bread, an equal quantity of each; pound them with honey or new milk; boil the whole together, and make it of a proper conſiſtence to apply with tow upon the ſcrotum, covering it with an ox's bladder; faſten it on with a bandage, and apply it freſh twice a day, a little warm, continuing the uſe of it till the ſwelling leſſens; if this remedy is properly applied, the horſe will ſoon be cured.

*Another.*

Bleed the horſe in the flat of his thighs, then take the flour of wheat and linſeed, turpentine, and oil of St. John's-wort, each four ounces; ointment of poplar-buds, two ounces; mix the whole with vinegar, and make a plaſter for the reins of the horſe, which will very much contribute to aſſuage the ſwelling of the teſticles. This may be made as ſoon as a pultice.

*A remedy for another ſort of a ſwelling in the teſticles.*

The ſwelling we mean, and which has not yet been mentioned, proceeds from a collection of humours

mours which deſcend on the part, and occaſion great pain; and theſe humours are very often the effect of eating graſs too tender; they may likewiſe proceed from a horſe carrying too heavy burthens, having worked too hard, or eat too much; when nature is over-charged, the obſtructed digeſtion cauſes ventuoſities which ſwell theſe parts. To know when the diſtemper proceeds from this, take your horſe abroad into ſome water, as high as the bottom of his teſticles, and if the ſwelling ſinks, you may be ſure it proceeds only from humours; and in that caſe, have recourſe to the following remedies:

Take potters-earth and dilute it with wine, ſtir it well till it becomes very liquid; then warm it, and with a ſponge dipped in it, foment the teſticles and ſheath.

If this does not cure him, add the juice of garden night-ſhade and roſe-water, an equal quantity of each; and as much of both as you had put of wine to dilute the earth; apply this five or ſix times a day till the horſe is cured. If the ſwelling proceeds from his having worked too hard, or carried too heavy burthens, you may know it by touching the affected parts, and feeling a hardneſs cleaving to the ſkin; in this caſe, uſe the following remedy:

Dry beans in an oven, reduce them to flour, boil that in vinegar, and make a plaſter to apply to the teſticles, binding it on with a bandage.

*Another.*

*Another.*

Take a large quantity of leys of wine, cummin, and beans, boil up the beans firſt, to ſkin them, and then boil the whole well together, and make an addition of vinegar. Put this compoſition into a bag that will cover the ſcrotum, and apply it as warm as the horſe can bear. You may repeat the application twice a day, and if an increaſe of the ſwelling be very conſiderable, three times.

*A remedy againſt the gangrene.*

It is proper to ſay that the following compoſition will keep a long time, provided it be in a dry place:

Take green and white vitriol, roch alum, ſealed earth, Venetian cerus, of each one ounce; reduce every drug into powder ſeparately, then take a clean earthen pipkin, well glazed, and put in it two ounces of ſpring water. Throw in each powder by itſelf, firſt the alum, then the green vitriol, then the white, and afterwards the others, ſtirring continually with a wooden ſpatula, till it becomes a little hardiſh; then let it dry upon the fire, till the whole is as hard as a ſtone; after which take off your pipkin, and let it ſtand till next day to cool, in ſome damp place, that ſo it may diſengage itſelf from the bottom of the veſſel, which it does eaſily, if that be well glazed. But as a gangrene will admit of no delay, you may break

break off ſome bits of the ſtone while it is warm, and apply them pulveriſed to the maimed fleſh which begins to mortify. There is no other way of uſing this ſtone.

*Another for the ſame purpoſe.*

Take green balm, either out of a garden or field, pound it, and expreſs the juice; then take the ſame weight of mutton ſuet, with a handful of common ſalt; put the whole into a pot, or pipkin, and juſt boil it up; ſtrain this compoſition through a piece of fine linen, and apply ſome of it freſh every ſix hours to the beginning mortification, till you ſee new fleſh appear.

*A remedy to hinder the gangrene from reaching the heart.*

Take aſſa-fœtida, bole-armenic, and flour of brimſtone, of each three ounces; powder the whole, and put it in a bottle of wine or ale, and give it the horſe in form of a draught. It will hinder the gangrene from ſpreading farther.

*Another.*

When you ſee the gangrene ſeize any part of a horſe's body, take the eſſence of turpentine, and warm it in ſome covered veſſel, which the air cannot enter. Waſh the wound with this eſſence, and then cut off what dead fleſh you can come

at. Put corroſive ſublimate powder upon what you cannot cut off, and apply tow dipped in the eſſence upon the wound, which muſt be dreſſed in that manner twice a day till it is cured. When the dead fleſh is all gone, the ſublim ate can be of no ſervice, but as the gangrene will cauſe an inflammation, make uſe of the following fomentation:

*Fomentation.*

Take roots of marſh-mallows, bruiſe and boil them in a ſufficient quantity of water, till the water becomes thick and muddy, then take it off the fire, and when cool, rub the horſe with it hourly, till the inflammation diſſipates.

*A remedy againſt internal venom.*

When a horſe loſes his appetite on a ſudden, and ſwells all over the body, it is a ſign of internal poiſon, perhaps from having eat ſomething venomous among his hay or graſs. Let the firſt thing you give him, be a draught of the following kind:

*A drink.*

Take juice of mullein, and oil of olives, of each two ounces; mix them together, and give the horſe. Let him take upon it a pint of white-wine, and ply him with laxative clyſters between whiles.

whiles. If the horſe is not relieved by this drink, depend upon it the poiſon is very violent; in that caſe have recourſe to Venice treacle, which uſe in the following manner: take Venice treacle four ounces, oil of olives two ounces, dilute the whole together, and mix it with a bottle of white-wine, which give for a draught. If the venom has not affected any of the noble parts, you may promiſe yourſelf a cure.

*A remedy for the bite of a ſerpent, or other venomous animal.*

If a ſwelling comes on any part of a horſe's body, inſpect it carefully, to ſee if there be no prick or bite capable of cauſing this inflammation; for there may chance to be ſome ſerpent or other venomous animal in the ſtable, eſpecially in the country, though the ſame thing may happen in a town, in any nation whatſoever. There is in Holland, a kind of venomous little beaſt, called a ſhrew-mouſe, ſomewhat leſs than a common mouſe, with a more peaked noſe, and of a greyer colour; its uſual reſidence is in ſtables, or in ſtalls, and its bite is very venomous to all ſorts of brute animals, and even to mankind. Loſe no time when its bite appears, but prepare the following remedies, which are eaſily come at, where-ever you be.

Take a pointed burning iron, make it red hot, and apply it to the part bitten, thruſting it as far as you can, provided there be no nerves in the way that may endanger laming the horſe. One hole is not enough, you muſt make five or ſix round the wound, and dreſs them with eſſence of turpentine, and oil of ſpike, mixed in equal quantities. For want of theſe, you may uſe brine, or water well ſeaſoned with common ſalt, or the following ointment: Take green cole-wort leaves, and hogs-fat, the ſame weight of one as of the other, pound them in a mortar to an ointment, with which dreſs the wound; you muſt not have recourſe to the common counter-poiſon, and to purging, in order to evacuate the ill homours, for fear the venom in the mean time ſhould corrupt the whole maſs of blood, and when that is once done, the beſt remedies will be ineffectual, and death muſt inevitably be the conſequence.

*How to purge a horſe gently, and to fatten him.*

Take about a dozen of ſtarlings, put them in a large copper juſt as they are, guts, feathers, and all, boil them till they drop to pieces, and then having taken them out of the water, pound them in a large mortar, put them again into the ſame water, and give them another boil; ſtrain the whole through a fine linen cloth, and ſee that you have about ſix quarts of the jelly, of which

give

give the horſe one every morning, having mixed with it half a pound of bean-flour. Never put in your flour till juſt as you are going to give the horſe his draught. You ſhould get a good ſtock of ſtarlings, that you may have enough to ſerve the horſe fifteen or twenty ſucceſſive mornings. Give him frequently a ſmall quantity of hay to provoke his appetite, which too much at a time will cloy. Before he drinks, let him eat a handful of whole beans, and get the cleaneſt oats you can, to feed him with three times a day. There are few horſes that will not grow fat when managed in this manner.

*Another way to effect the ſame.*

Firſt, keep your horſe always with an appetite, feeding him little and often. Give him oats three times a day, putting into them every time a handful of nettle-ſeed, and let him conſtantly drink warm water, blanched with bean-flour; or for want of that, wheat-flour. In three weeks or a month, this will make him fat.

*Another way.*

Inſtead of oats, feed your horſe with wheat, half-boiled. Let his water every time be blanched with wheat-flour, and before he drinks, always give him a handful of fenugreek mixed with a handful of oats, in order to warm his inſide, and make

make him often thirſty, for the more he drinks, the ſooner he will be fat.

*Another.*

When you have a mind to fatten a horſe, give him, inſtead of oats, a peck of rye-flour, morning and evening, made into a paſte, and rolled up in balls. You have nothing more to do but to give him hay, a little at a time, and often; and now and then a peck of beans, juſt par-boiled, watering him with blanched water, in which leaven has been ſteeped. This will fatten a horſe in three weeks or a month, and make him fit for ſale.

*To give a horſe an appetite.*

Take honey four ounces; pepper and ſtarch, of each one ounce; violet leaves, nutmegs, barley-flour, of each half an ounce; mix the whole together, and make it into balls, which roll in liquorice-powder. After each ball, to drive it down, make the horſe ſwallow a quarter of a pint of antimonial wine, given through the horn.

*A remedy for cancers in the mouth, or upon the tongue of a horſe.*

Take three or four large leeks, and pound them well; an ounce of powdered alum; two ounces of honey; half an ounce of broken pepper; and an

an ounce of ſalt. Put the whole in a quart of verjuice, or the juice of lemons, and waſh the cancers with it three or four times a day, till they are cured, which will not be long.

*For a horſe whoſe tongue is cut by the bridle or halter.*

A horſe often cuts his tongue in the place where he mouths the bridle, or the halter croſſes him. To remedy this when it happens, take human urine, ſalt, honey, and pounded pepper, mix the whole together, and waſh the tongue with it ſeven or eight times a day, with a linen rag. Or put the ingredients together in a rag, and tie them up for the horſe to hold in his mouth four or five times a day, an hour each time, the quantity of honey being increaſed to keep the other ingredients together. This laſt manner, in fact, is better than the former, and will ſoon cure a recent wound on the tongue. A hurt of this kind ſhould never be neglected, becauſe the tongue of a horſe that has been cut, and not preſently healed, is apt to make his mouth rough, which is diſcovered by his toſſing about his head, and oppoſing the hand.

*Another for the ſame purpoſe.*

Take dried figs, ſuch as are ſold at the grocers, pound them to a maſh, and mix with them the ſame

ſame weight of honey, to make a compoſition for holding in the mouth, like the preceding.

*Pills for a horſe in a ſick and languiſhing condition.*

Take freſh butter eight ounces; honey of roſes four ounces; ſenna-leaves, coriander-ſeed, and mithridate, of each one ounce; bitter-apple, bay-berries, and ſaffron, of each half an ounce; ſugar two ounces; powder and mix the whole well, and make pills for two doſes, to be given two ſucceſſive mornings, and waſh them down with a little wine. The horſe ſhould faſt ſix hours before, and as many after taking this remedy.

*Another way of purging a horſe.*

Take Succotrine aloes, ten drachms; ſenna-leaves one ounce; ginger in powder, three quarters of an ounce; ſweet oil, one pint; mix the whole together, and give it the horſe, after he has faſted all night; keep him ſix hours longer without eating or drinking, and then give him ſcalded bran, and blanched water. The next day, at the ſame hour he took his purge, give him an airing, if it does not work; and when it begins to operate, put him up again into the ſtable, cover him warm, and from time to time give him ſcalded bran, or even ſcalded oats, but in very ſmall quantities, becauſe his ſtomach will then be weak. Purges take away the appetite of a horſe, which

which muſt therefore be reſtored with aſſa-fœtida, or ſome cordial compoſition.

*A water proper for all ſorts of wounds.*

Take round birthwort and powdered ſugar, of each two ounces; boil the birthwort in a quart of white-wine, till it comes to a pint, and then ſtrain the whole through a fine linen cloth, and keep it in a bottle for uſe. You need only waſh the wound twice a day with this water, in order to keep it clean, without any other application; and if it be freſh received, this alone will ſoon heal it.

*How to dry up any wound.*

Waſh the wound once a day with warm wine, and if you melt a little ſugar in it, ſo much the better; then take the powder of roſemary-leaves, and ſprinkle on the ſore, which will ſoon dry away.

*An excellent ſuppurative for the corns or kernels that come on a horſe's back.*

In the firſt place take oil, or any warm ointment, or for want of that, hogs-greaſe, the oldeſt you can get; with this rub the corns, and it will make them fall off; then dreſs the wounds with oil of turpentine and lint, made of old cords beat to a powder. As you put on the oil of turpen-

tine, ſprinkle the lint-duſt upon it, which will bind it together, and ſtay on the part. Continue this courſe till the horſe is cured. Other medicines might be preſcribed, which would be harder to get, more expenſive, and yet no better.

*Another ſuppurating ointment.*

Take of ſweet oil two ounces; yellow wax, Venice turpentine, black pitch, black and white roſin, mutton ſuet, and hogs-lard, of each half an ounce; melt the whole together over a gentle fire, and reduce it to an ointment, which you muſt preſerve with care. It is good in all caſes where ſuppuration is wanted.

*The beſt way of cutting off a horſe's tail.*

You muſt ſhave off the hair in the place you deſign for the operation, raiſing up and turning back what you intend to preſerve. Then take a bar, or thick piece of wood, of juſt a proper length to ſupport the tail when ſet on one end, hold it upright with one hand, lay on the tail, and with the other hand, clap acroſs it a ſharp hedging bill at the proper place, which muſt be ſtruck through with a hammer, or mallet. Some ignorant people put the bill under the tail, and ſtrike on the latter, but this hurts and bruiſes it, and may be attended with bad accidents. The tail being cut off in this manner, you muſt take a hot

ſearing

ſearing iron, made in the form of the letter O, and apply it gently to ſtop the blood; then take roſin, and put a little of it to the end of the ſtump, clapping to the irôn which has now loſt ſome of its heat, to melt it. Put up your horſe again in the ſtable, but take care he does not ſtand near any wall, or partition, againſt which he may rub himſelf, for ſome horſes have killed themſelves by that means, having brought a mortification into their tails. When the operation is over, you muſt rub the tail quite to the croſs of the reins with brandy, continuing to do ſo night and morning for ſome days. If the horſe ſhould unluckily rub and fret the part, or the ſtump ſhould be bruiſed, or too much burned, you muſt rub quite to the croſs with ſpirit of turpentine and brandy, beat up together in equal quantities.

It is proper for one to ſtand behind the horſe with a whip, to keep him from flinging about, and ſo to prevent any accidents.

*The manner of gelding a horſe well, and treating him during the cure.*

There are many different ways of gelding a horſe, ſome whip them, that is, after they have made an opening in the ſcrotum, with a razor or inciſion knife, ſo that the teſticles come out, they bind the roots of them with pack-thread, or

coblers-end, and then cut them off below the ligature, cleanſing the inſide of the ſcrotum with oil only, or oil mixed with wine. Others billet them, that is, they take a haſle-ſtick, of moderate thickneſs, ſplit it through, take out the pith, and make a cavity the whole length, which they fill with powdered vitriol, verdegris, or ſometimes with ſublimate; with theſe ſticks they take hold of the horſe between the teſticles and the belly, tying them on as tight as poſſible, and leaving them nine or ten hours, by which time the parts will entirely fall off. Neither of theſe ways are bad in themſelves, but they are not proper for a horſe that has a rupture, nor one whoſe ſtrings of his teſticles are large and ſwelled. We have no opinion therefore of either of theſe operations, and that which follows is much more convenient, eſpecially as it may be performed at any age, or in any ſeaſon, provided it be done ſkilfully.

You muſt lay down the horſe upon his back, according to the cuſtom in Germany, and put a large leathern ſtrap round one of his hind legs, bringing it under his neck, and ſo drawing the foot near the ſhoulder, that you may have room for doing your work with freedom. Then take up one teſticle, hold it faſt in your hand, and with a razor or inciſion-knife make a large opening in the ſcrotum for the teſticle to come out. You muſt uſe a delicate hand in dividing it from the ſtrings and ligaments, which form a ſort of SS, and

and then the teſticles extend in length. If he be a vicious and dangerous horſe, you muſt cut it off as near his body as poſſible; but if he be a quiet one, divide the ſtrings as near as you can to the teſticle.

Having got the teſticle out, take a piece of plate-iron, about two inches broad, and the thickneſs perhaps of a crown-piece, claſp the teſticle within this, and ſqueeze it cloſe; then take a wet diſh-clout, and put it between the ſaid plate and the ſcrotum, and cut off the teſticle with a hot iron; throw on ſome bits of ſulphur before you take away the iron, and burn them on the part; and, laſtly, rinſe the ſcrotum well with fair water. Proceed in the ſame manner with the other teſticle.

Before this operation, you ſhould draw the horſe's yard out of the ſheath, and cleanſe it well with water from all filth. This will, in ſome meaſure, prevent the greatneſs of the inflammation, and of the ſubſequent pain. All the farther care required is, to keep the horſe from wind, in a very cloſe ſtable, and to waſh his belly ſeven or eight times a day with fair water, cold in ſummer, but warm in winter. If the inflammation becomes very great, which ſometimes happens, you muſt frequently waſh the ſcrotum, ſheath, and all that is ſwelled, with cream, till the ſymptoms diſappear. During the whole proceſs, you muſt give the horſe no oats, but as much ſcalded bran as he will eat, and let his water be blanched, and a little warm.

Though

Though we have ſaid that all times are equal for this operation, yet the ſpring is the moſt advantageous ſeaſon; unleſs neceſſity urges the contrary. The horſe preſerves his hair better, and keeps it ſmoother at that time. We muſt obſerve farther, that if a horſe is lean and meagre, when gelded, he will never grow fat again, nor have a good coat, even though the operation be performed in autumn; and that there is moſt danger of a mortification when it thunders, which weather therefore ſhould not be choſen. Some have a charm againſt this ill effect, which we omit, as equally idle and ſuperſtitious.

We had forgot to tell you, that during the cure, beginning the morrow after the operation, you muſt walk your horſe abroad three or four times a day, a quarter of an hour each time, if the weather be fine and no wind ſtirring; when you cannot take him out, walk him in the ſtable, in order to make him evacuate the matter from his wounds; every one knows that his fever will increaſe nine days, and be as many more in going off; but if the method here laid down be obſerved, he will recover in a very ſhort time.

*Hurts on the withers, or wither-wrung.*

This accident is common in the army, either through bad ſaddles, or bad pannels on the horſes of burthen, or ſometimes through the truſſes of forage

forage being ill made up. It is very eaſy to diſcover, becauſe it begins by a ſwelling, which proceeds from the extremity of the cheſt, juſt between the movement of the ſhoulders. Many horſes are loſt through this misfortune, and the ignorance of thoſe who take them in hand, who apply outward remedies to bring the ſwelling to a head, which they afterwards open. When they have done this they are uſually unable to prevent ulcers or ſilanders in the middle of the wound, which grow to the adjacent joints, and then a humour often flows down between the ſhoulder-blade and the body; then all their ſkill is at an end, for the matter having no longer an outward drain, the horſe of conſequence dies, merely becauſe the proceſs was not made as it ought, and according to the following directions:

To prevent ſuch an accident, as ſoon as you perceive the ſwelling above deſcribed, let the cauſe be what it will, you may hinder any collection of matter by this compoſition:

Take the whites of five or ſix eggs, and beat them up to a froth; then take an ounce of crude roch-alum, which reduce into a fine powder, and mix with the eggs; adding, after you have well mixed them, about a glaſs of ſpirit of turpentine; beat up the whole again, and add a ſmall quantity of brandy; continuing to beat it till it comes

to

to a kind of pappy conſiſtence, with which you muſt rub the ſwelling three or four times a day, and in a little while it will be entirely gone. In caſe the ſwelling was far advanced when you took it in hand, and ſome matter already formed, there will be no great damage. The matter will diſcharge itſelf by continuing this remedy. This German mode of practice, in ſome caſes, we do not approve of.

*Another remedy for the ſame diſorder.*

If you are in a place where you can have none of the articles before mentioned, take brandy, and dilute in it a bit of ſope, and then rub the ſwelling with it, till you make a lather; repeat this every three or four hours till the tumour diſſipates. When you cannot get brandy, uſe urine, brine, or water well ſalted, with the ſope; but theſe muſt be uſed ten or twelve, inſtead of three or four times a day.

If all other means are wanting, as ſoon as you perceive this diſorder, take a green turf out of ſome meadow, with the earth ſticking to the roots, and apply it to the ſwelling on the graſſy ſide, renew this every three or four hours till the tumour diſappears; or till you have furniſhed yourſelf with one of the remedies above mentioned.

*Navel-*

*Navel-gall.*

This accident proceeds from the ſame cauſe as the foregoing, and conſequently muſt be treated in the ſame manner; what we call a hurt upon the navel, is in reality upon the kidneys, towards the croſs of the reins, where the crupper and ſaddle-buckle join.

*Of impoſtumations in the withers.*

This is occaſioned by ſuffering matter to gather in the ſwellings on the withers, and a moſt terrible diſorder it is, in the army, eſpecially in hot countries, where the flies are very troubleſome. As the horſe moves, the matter trickles down continually between his body and his ſhoulder, and as it can have no paſſage outward, becauſe you cannot force one through the blade-bone, thoſe who know not how to make the following operation, are obliged to give all ſuch horſes over:

You muſt firſt blind your horſe, and throw him down on the ground; then take a ſtake about as thick as your leg, four or five feet long, and ſharp at one end, drive it into the ground with a beetle, and place the horſe that it may ſtand juſt between his ſhoulder and his body, ſo that he cannot ſtir while you perform the operation, which is thus done. Tie a cord to the horſe's foot, and about two yards diſtant drive another ſtake into the

ground, to ſerve as an axle-tree to a coach or a cart wheel, that you muſt put thereon; faſten the other end of the cord to this wheel, and then turn it about, till by winding up the cord, you extend the horſe's leg as much as it will bear; you may then make an inciſion between the body and the ſhoulder, to the very top, to come at the matter behind the blade-bone, by an opening to be afterwards made. The inciſion is made with a flat-iron, ſomewhat crooked, about an inch broad, and as thick as two crown pieces; the curvity of this inſtrument is in proportion to the ribs, between which and the ſhoulder it muſt paſs, in order to let out the matter that is lodged above. And for this purpoſe you muſt introduce a ſmall rowel, from the top of the withers to the bottom, between the ſhoulder and the trunk, which may be eaſily done if your farrier has ever ſo little addreſs. This rowel muſt be left in only twenty-four hours, and then let it be dreſſed like any common wound, which method will ſoon put your horſe out of all danger, as the matter between the trunk and the ſhoulder will be diſcharged. You may make the rowel either with Hungary leather, or with tow and horſe-hair twiſted together, dipping it into warm baſilicon. If at the end of three full days the matter does not run plentifully below, you may put the rowel in a day or two longer.

Never

Never forget, during the whole proceſs of the cure, that your horſe is to have no oats, but only ſcalded bran; beſides that, it is abſolutely neceſſary to make him eat root of baſtard rhubarb, or the herb patience, which grows in almoſt all countries, and is a kind of wild ſorrel; it ſhoots up in meadows, and by the ſides of ditches, and ſometimes is very large; the root is yellow, like that of ſorrel, but both ſtalk and leaves are much larger, though of the ſame colour, at the time of ſeeding. That which grows in water is beſt, and next, that which grows in fat land; but for want of one ſort the other may be uſed, and the more a horſe eats of either, cut very ſmall, the ſooner will he be well. This root is alſo good for all other ſorts of wounds whatſoever, and it is certain, that in a temperate climate, when the flies give no diſturbance, a horſe may be cured by means of this root only, without any great operation.

*Faintneſs for want of nouriſhment.*

This diſtemper is more common in the army than any where elſe, and occaſioned by great heats and the long marches they are obliged to make. It oftener happens to briſk and lively horſes, than to thoſe that are heavy. Nothing more is wanted than to diſtinguiſh it; when a horſe falls down on a ſudden on the road, without having eat or drank, the duſt having got into his mouth,

and through his noſtrils, ſtopping up the paſſages, ſo that he cannot breathe, and drops as if he were dead. Horſes that are uſed to go in harneſs, either in coach or carriage ſervice, are very ſubject to it. In order to cure this diſeaſe, you muſt take fair water, waſh the head of the horſe with it, pour ſome of it into his noſtrils, into his mouth and into his ears; this will raiſe him in a little while; you may then let him drink, and he will be able to proceed on his journey. Horſes that are ſubject to this diſorder ſhould not be neglected, but ſuffered to drink on all occaſions that offer. The inteſtines of ſuch horſes are always narrower than in others, which makes them unable to bear hunger or thirſt; it is much the ſame with men, ſome of whom can go without drinking more eaſily than others.

### *Of the poll-evil.*

This is a very troubleſome diſtemper, and proceeds from different cauſes, eſpecially to large draught horſes, who wear hempen halters, as thoſe belonging to the artillery, the proviſions of an army, or any ſort of carriages; not but that others are alſo ſubject to it. Horſes affected with it are apt to be frightened with every little thing, and pull as if they would break their harneſs to get looſe, which occaſions the halter to hurt them between the ears and the neck, where the head and neck

neck join; and this, by degrees, becomes more and more painful; a matter at laſt forms in the part, which not being perceived, extends along the cheſt, cauſes an inflammation, and often makes it neceſſary to open the tumour along both ſides of the mane, the length of half a foot, or more. In theſe ſorts of wounds, which are made through neceſſity, care muſt be taken to uſe no fat ointment, nor an oily one, but of a reſtringent nature. This diſtemper is the more difficult to cure, as it is hard to keep the remedies on, and you muſt put no ligature on that part, but take a thick piece of linen cloth, and cut it about a foot ſquare, that it may go between the ears, and extend along the mane. The cloth muſt be four or five times double, and faſtened under with narrow tape, in order to keep on the remedies.

Theſe accidents may be occaſioned by a blow on the head, from a brutal driver, when a horſe heſitates at paſſing any place. It is needleſs to multiply remedies that are proper for ſuch wounds, becauſe they who have dreſſed one may dreſs others.

*Of a ſhoulder-ſlip or ſhoulder-wrench.*

It is common, for want of knowledge, to confound the diſorders of a horſe's ſhoulder, and only to ſay of each, that it is a wrench, or a ſlip; but it is proper to know that a horſe may lame his ſhoulder

ſhoulder different ways, and without ever ſtraining himſelf in the leaſt; this diſtinction ought to be judiciouſly made, to prevent any miſtakes that may enſue.

A horſe may be lamed, in the firſt place, by having been ill ſaddled, that is, by having the ſaddle put too forward, and rode on by a heavy man, who neither knows how to place himſelf, nor to adjuſt his ſtirrups; if one ſtirrup is longer than the other, the man conſequently bears more on one ſide than the other, and the ſaddle-bow preſſing moſt againſt one ſhoulder, muſt of courſe bruiſe it in a long day's journey, conſequently the horſe may be lamed without making one falſe ſtep; in this caſe you apply to a farrier, who tells you the horſe has ſlipped his ſhoulder, and that his caſe requires great care and pains; he is paid as a ſkilful man, though, perhaps, all the while, he is a mere blockhead, and the horſe renews his malady for want only of mending the ſaddle. You put him in the hands of another equally as ignorant, who treats him in the ſame manner, and leaves the ſaddle juſt as it was. After the poor beaſt has remained for ſome time in the ſtable, a freſh rider mounts him, and changes the ſaddle, perhaps by hazard, or makes the ſtirrups even, and rides him without ever laming him; this is evident enough that the ſaddle, in ſuch caſes, ought to be inſpected, and made to fit the horſe properly.

A horſe

A horſe may lame his ſhoulder by coming haſtily out of a ſtable, and running it againſt the door or the poſt, or by a kick from another horſe. Your farrier then cures him by the help of ointments, and in the eyes of ignorant people, goes for a ſkilful doctor.

A horſe that has, in reality, an extenſion by a ſtrain within the ſhoulder, between that and the ribs (having no joint there that holds thoſe parts together, as the haunch is faſtened to the body, nor any other ligament but fibres and tendons) ſuch a horſe, who has this misfortune, is not to be cured by remedies applied without the ſkin. For how ſhould their ointments penetrate through the ſhoulder-blade, a ſolid bone, to cure the diſorder underneath it? This can be done no other way than by manual operation, as ſhall be ſhewn in the article of true ſhoulder-ſlips.

There is another ſort of cauſe that may make a horſe lame in the ſhoulder, without his having ever ſtrained himſelf, or received any accident. He limps now on one ſide, now on the other, and ſometimes on both, not being able to ſtand upright. This caſe is the moſt difficult of all to cure, as it proceeds from nature; the horſe having been got by a Turkiſh or an Arabian ſire, whoſe ſhoulders were extremely flat and narrow, and cloſe as it were together; ſome perſons never obſerve this, and are ſatisfied when they go to a ſtallion,

ſtallion, if he looks well, whether he be either a Turk or an Arabian. Now to come at the knowledge of this defect, when you ſee a horſe whoſe ſhoulders are cloſe together and quite flat, inſtead of being fleſhy, there is little good to be expected from him ; ſuch ſhoulders make a ſort of dimi-quarter circle, from the bottom to the withers.

Almoſt all the farriers are miſtaken when they apply rowels in this caſe, as they make the ſhoulder leaner and leaner, and render the horſe uſeleſs, and perhaps in a ſhort time kill him ; whereas they ſhould endeavour to nouriſh the part, which is what it wants.

A courſe of remedies follow, in proper order, for the ſeveral accidents in the ſhoulder that have been here enumerated :

*For a horſe that has been lamed in the ſhoulder by the ſaddle.*

If you are in a place where drugs can be eaſily got, take ſpirit of turpentine and brandy, an equal quantity of each ; beat them up together, and rub all the part that has been hurt by the ſaddle ; put your ſaddle farther backward when you ride him again, which may be the next day, or the day after. If you have no ſpirit of turpentine take ſope and brandy, and rub againſt the hair till you make a lather ; repeat this three or four times following, as faſt as it dries in, and thus you may cure your horſe

horſe while you proceed on your journey. For want of ſope, you may uſe roch-alum; and for want of brandy, urine. But if you can get ſpirit of turpentine, the whites of eggs, brandy, and urine, the beſt way is to make a compoſition of them all, as directed for horſes hurt on the withers, and rub the horſe with it four or five times, which will effect a cure; you may uſe the ſame remedies in other places above mentioned; but if the inflammation be great, the diſorder of long continuance, and one ſhoulder appears thicker than the other, you may introduce a rowel, which ſhould be made with tow, dipped in warm ointment of baſilicon; keep it in a fortnight, and, in the mean time, rub the ſhoulder with the following ointment:

Take ointments of marſh-mallows, poplar-buds, roſes, oil of bays, and honey, of each two ounces; melt them together, and ſtir the compoſition till it is cold; then uſe it once every day, and make more if this be not found ſufficient. The rowel will draw the bruiſe the horſe has received to a ſuppuration, and the ointment will nouriſh the ſkin and keep it from ſhrivelling.

It is not proper a horſe ſhould do any work while he is under this courſe; but even if one is in the army, or upon the road, we may expect a cure from purſuing it cloſely, though not ſo ſoon as by giving him reſt.

*A remedy for the cooling or chilling of the ſhoulders.*

In this diſorder a horſe cannot ſupport himſelf before, and has very little motion in his ſhoulders, as if they were rivetted or bound together. Some perſons, for want of knowledge, take this to be a foundering, whereas foundering hinders the motion of the legs, and a cooling or chilling of the ſhoulder, affects the ſhoulder only. This diſtinction being made, you may treat your horſe in the following manner:

Firſt, make him ſwim, as the farriers call it, on dry ground; that is, tie up one of his fore-legs, bent at the knee, with a broad leather ſtrap, then walk and trot him upon three legs, till his one leg before can no longer ſupport him; exerciſe him in the ſame manner upon the other leg, and afterwards bleed him in the plate-vein, and rub his ſhoulders well with the blood, and over that with ſpirit of turpentine, oil of ſpike, oil of petre, and brandy, mixed together in equal quantities; ſprinkle rye-flour over all, in order to make a ſort of cruſt upon the two ſhoulders, which ſhould be refreſhed once a day, for ſeven or eight days running, with oil of bays; and afterwards with an unguent made of the ointments of marſh-mallows, poplar-buds, and roſes, mixed up with honey, an equal quantity of each ingredient. You may continue to rub the ſhoulders of the horſe with this

this compoſition, once every day, for three weeks or a month, in which time it will comfort him greatly; leave him afterwards five or ſix weeks in the ſtable without ſtirring out.

As the humours may poſſibly deſcend into his feet, you ought to have his two fore-feet unſhod, and pared well, before you begin the cure; then let his ſhoes be put on again, and from time to time ſtuff the hollows of them with cow-dung fried in hogs-lard, and after mixed with vinegar. By means of this remedy, you may prevent any ſuch accident in his feet; if you rub his hoofs towards the crown with oil of bays, ſo much the better. If all theſe remedies are found inſufficient, it is to no purpoſe to look after others.

*A remedy for what is commonly called the ſhoulder-ſlip.*

Before you undertake any thing about the ſhoulder, firſt have the horſe unſhod, and his feet pared, and ſhoe him again as even as poſſible; then make him ſwim on dry ground, as directed in the foregoing caſe; excepting that you muſt do it here with one leg only, and that you muſt keep the lame one to the ground; whip him on upon a trot till he ſweats, and then throw him down, and drive two ſtakes into the ground to ſupport him, one againſt the hollow behind his ſhoulder, and the other between the belly and the thigh, penning him up that he cannot ſtir; take a long

cord with a ſhackle to it, and faſten it to his foot, at the joint between the footlock and the hoof, and tie the other end to the wheel of ſome carriage, fixed according to the direction for a horſe that has impoſtumated withers, in order to extend his leg in a right line; you muſt then make an inciſion in the ſkin, between his trunk and his ſhoulder, as directed in the ſame article, and introduce your iron in three places, one in the middle to aſcend almoſt to the top, and the two others on the ſides of it, making with it a ſort of fork with three prongs. Theſe openings being made, you muſt have candles caſt in flat iron moulds for that purpoſe, and compoſed in the following manner:

Get a flaxen wick of three threads, that may lie flat by each other, and having put it into the mould, take an ounce of Venice turpentine, an ounce of ſpirit of turpentine, an ounce of oil of bays, an ounce of ointment of marſh-mallows, two ounces of mutton ſuet, and half a pound of yellow wax; melt the whole, add half an ounce of verdegris in powder, and having mixed it well in, fill your moulds; when your candle is cold, in order to looſen and take it out, paſs the mould over a wiſp of burning ſtraw, or ſome other flame, and then putting the candle in again, introduce the mould to the very bottom of the middle hole, by which you muſt begin. Your mould muſt be very

ſmooth

ſmooth and even, and you ſhould take a flat piece of wood, of the form and ſize of the candle, which you muſt introduce in its place, as you draw out of the mould, in order to leave the candle behind. Fill up the two other holes in the ſame manner, and then, with a large needle and a coblers-end, ſtitch the ſkin together in the middle, to keep all in; then let your horſe riſe, and put him in the ſtable, where a place muſt be prepared with planks for him to ſtand upon, ſo even and ſmooth that one leg cannot be higher than the other. This is contrary to the practice of ſome farriers, who put a high ſhoe upon the well foot, which often makes the legs uneven, by ſuffering the other ſhoulder to deſcend, and ſo lames a horſe for his whole life after. When your horſe is in the ſtable, take a large towel, and tie his two feet as cloſe as poſſible, as if he was fettered. Bind him in the ſame manner at his knees, ſo that he cannot bend them. You muſt renew the candles every day, and every day diminiſh their length, till the holes are quite filled up.

It is neceſſary alſo, to faſten your horſe in ſuch a manner, that he may not lie down for forty or fifty days. This is done by four reins, or thongs, tied two to the rack, and two to the manger, leaving him barely room to eat his bran, for corn he muſt abſolutely have none, during the whole cure. As the ligatures may occaſion the horſes legs

legs to ſwell, it is proper to rub them every day with leys of wine. At the end of forty or fifty days take off the bandages, as well as the two reins that were tied to the rack, and litter him well. Perhaps it will be ſome days longer before he lies down, but he will do it at laſt, and the ſwelling of his legs will diſſipate. You muſt not take him out of the ſtable, however, for eight or ten days after this, and then you may give him a gentle airing, taking great care not to turn him on the ſide where his diſorder lies; this ſhould be obſerved a long while, and if ever there be an abſolute occaſion to turn, in that caſe, take as large a circle for it as you can.

Though a horſe may be able to work gently in a month after he comes to lie upon his litter, yet he ought not to be put to it for five or ſix months; we adviſe no perſon, therefore, to perform this operation except to a horſe of great value, unleſs he does it by way of experiment, becauſe it will coſt him much labour and money. To nouriſh the affected parts during this cure, make uſe of the ointments that are preſcribed in the article of Withered Shoulders, rubbing in ſome of them once every day. We do not adviſe any to undertake the operation here mentioned, becauſe it is uncertain, barbarous, and ſtupid; we only advance the copy of the practice of an Italian farrier, who invented this manner of treating what he calls

calls *a ſlip in the ſhoulder*, and the different experiments, he ſays, have been made with ſucceſs, but we doubt its being the beſt that ever was invented. Many of theſe experiments were alſo made in his moſt Chriſtian majeſty's ſtud, of which he mentions having been forty years an inſpector; we hope his moſt Chriſtian majeſty, and every other monarch, has, at this time, more humane as well as more ſkilful farriers.

## *Of the ſponge.*

This diſtemper is not ſo dangerous as diſagreeable to the ſight, becauſe it never makes a horſe lame. It proceeds from his bending back his fore-feet when he lies down, ſo that the points of the ſhoes, or the froſt nails, when he has any, preſs againſt the pit of the ſhoulder, juſt where the hand is applied to feel if he has a fever. This, in the ſequel, cauſes a great ſwelling, a maſs of foul fleſh ariſes, and a large bliſter full of red humour.

If our grooms and hoſtlers were not ſo idle, it would be eaſy to get rid of this diſorder, and quite diſpel it at its firſt appearance, by only ſponging the part with well or fountain-water, the coldeſt they could get, uſing a pail-full of it at a time, five or ſix times a day; in two or three days, at moſt, all the ſwelling will thus diſſipate; but if it be neglected till the bladder of bloody ſanies is formed, though

though it does not lame the horſe, it will be a long while in curing, in ſpite of all the remedies and operations you can have recourſe to; when the ſwelling does not give way to the cold water, prepare the following ointment:

Take cantharides, black-hellebore, and euphorbium, of each two ounces; powder them all, and make an ointment with oil of bays and Venice turpentine, an equal quantity of each; let it be made without warming, then ſhave off all the hair from the ſwelled part, and put on a large plaſter of the ointment, making it faſt with ligatures brought between his legs, and over his withers; renew this plaſter once every day, five or ſix days running, which will draw out all the noxious humour, and diſſipate the ſwelling. It muſt not be thought ſtrange if you find the ſkin fall off as well as the hair, becauſe they will both come again more beautiful than before.

If the horſe takes again to his old method of lying down, and another ſwelling appears, run a hot iron into it, at the bottom, to let out all the water, and then dreſs it as you would another wound. It is to be hoped that the pain he may feel in this operation, will make him leave this habit and take to lie on his ſhoes.

*Stiff*

## *Stiff Legs.*

There are ſome horſes, who, through the remains of an old diſtemper, or ſome fatigue, become ſo ſtiff in their fore-legs, that they can ſcarce bend their knees, which makes them ſtumble, and ſometimes fall, when they are ever ſo little hurried, though even on a walk. When this is the caſe, you muſt endeavour to fortify the nerves of the legs and joints, by fomentation of marſh-mallow-roots, leys of wine, or any other medicines proper to ſupple and ſtrengthen thoſe parts; there are ſome good recipes for it in this book; but if in ſpite of all the good remedies you can uſe, the legs continue ſtiff, you muſt make the following operation under the ſhoulders, or, to ſpeak more properly, under the breaſt, between them and the knees, as is pointed out in the explanation of the figures; you ſeem to feel a nerve very hard and ſtiff, which, in reality, is only a tendon; it lies juſt under the vein that we open for diſorders in the ſhoulders, which may be juſtly called the *bow-vein*; here you are to make an inciſion with a razor or proper knife, deſcending along the tendon, and opening the ſkin about two inches; you will find this tendon ſeparated, as it were, from the ſkin and the fleſh, as if it was a nerve, which makes many call the operation *cutting the nerves of the fore-legs*. Having made this

opening with a ſtag's horn, or any ſuch-like inſtrument, which is crooked and pointed; you muſt get under the tendon, in order to draw it without the ſkin; you muſt cut this in two, and the ends will draw in, the one upward, and the other downward; this being done in both legs, fill up the wounds with ſalt-butter, putting about three ounces of ſalt to half a pound of butter, and mixing them well; you muſt continue to dreſs it with nothing but this till a cure is effected.

As ſoon as the operation is performed, you muſt air him at leaſt a quarter of an hour, and then put him again in the ſtable, filling the wounds with ſalt-butter; take him out every morning and evening, and pace and trot him, obſerving ſtill to dreſs his wounds according to thoſe directions when you put him up, and keeping juſt the ſame courſe till he is well. We would not adviſe you even to lead your horſe upon any pavement, but only on plain ground; once every fortnight you may gradually ſhorten the corners of his ſhoes; this will in time make his legs as free as before; though, in fact, he will not have ſo much ſtrength in them as another horſe who never had this misfortune; he may be of uſe a long while if he has youth on his ſide.

Of

*Of an ox-kneed horſe.*

It is almoſt ſuperfluous to ſpeak of this defect, becauſe it proceeds from nature, and can never be cured; we ſhall only point out what ſuch horſes are good for.

When you ſee a horſe whoſe two knees bend in towards each other, and his feet go wide aſunder, we call him *ox-kneed*, becauſe oxen and cows have their knees made in the ſame manner.

Theſe horſes are by no means proper to ride; they are fit for nothing but the cart or the plough; in work of this kind, they walk only, and are boren up in the ſhoulder by their collars and harneſs, which makes them all able to do ſome ſervice.

*Of the three kinds of ſplents.*

Solleyſell ſays, there is one of the three ſorts of ſplents that ought not to hinder a man from buying a good horſe; we mean the ſimple ſplent, which appears within the leg under the knee, remote from the great nerve, and the joint of the knee; here it gives no pain, is only diſagreeable to the ſight, and goes away in time of itſelf, which makes it uſeleſs to have recourſe to remedies. We ſhall only give ſome for the two other kinds, which may incommode and lame a horſe.

All the three ſorts are known by the ſame rule; for whenever you ſee a tumour upon the flat of the leg, whether within or without, if it be under knee, and appears hard to the touch, it is a ſplent; and when it is ſituated as above deſcribed, it ſignifies nothing; but when it comes upon the joint of the knee without any interval, it loſes the name of a ſplent, and may be called a fuſee. It then makes the leg of the horſe ſtiff, and hinders him from bending his knee, conſequently it obliges him to ſtumble, and even fall, and after a little violent exerciſe makes him lame. Reſt alone cures the lameneſs, but it will not cure the fuſee.

The third kind of ſplent, whether within or without, is when you feel it between the nerve and the bone, and ſometimes even at the end of the nerve. This is called a nervous ſplent, and is the worſt of all the other kinds, as the horſe is never here ſo firm footed, but he limps at every degree of labour. The French reject every horſe that has a ſplent, very often without knowing how to diſtinguiſh them, and one that has only a ſimple ſplent, is as bad in their eyes as one that has the other ſort; but a ſimple ſplent always goes away of itſelf, by the time a horſe is eight or nine years old.

*A remedy for ſplents.*

Take a ſtick (haſle, if you can, though the difference perhaps is only fancy) of about two fingers thickneſs, and beat and rub the ſplent with it gently, in order to ſoften it by degrees. Continue this courſe till the ſkin feels as if it were detached from the calloſity; then, with the point of a lancet or fleam, prick it in ſeveral places, in order to let out the corrupted blood. This done, take a large ſtopple of tow, dipped in ſpirit of turpentine, and over it put a linen cloth, five or ſix times double; and over this, a piece of pig's or ox's bladder, and bind it with a linen ſwathe. Let the ſwathe be about the ſame breadth with what is uſed for a man's leg, but longer, that it may the better keep on the dreſſing; leave it there twenty-four hours, and then renew the dreſſing a ſecond and third time. To what purpoſe, will ſome ſay, is all this great wrap? Is not a cord, or a common bandage, as well? What good can the pig's or ox's bladder do? We will inform you, the piece of bladder hinders the ſpirits from evaporating, and the linen pledget keeps the dreſſing on cloſe, without hurting the nerve, which would be the caſe if you were to uſe a cord; the remedy would be worſe than the diſeaſe.

*Of*

### *Of ſplents, or fuſees.*

We here inform the reader, that ſplents and fuſees are calloſities made by a humour in the legs of a horſe, according to the deſcription before given. Theſe two excreſcences have the ſame cauſe, and yet are widely different; for ſplents no way incommode the horſe, unleſs they come too near the nerves, as before mentioned; but fuſees, on the contrary, often lame him, being of a great length, and growing to the bone which goes to the joint of the knee, and as it were riveting it. A horſe that has them, therefore, may be called *lock-kneed*, and has, in effect, his legs ſo ſtiff that he limps, and his knees cannot bend without violence. When a knee is once affected in this manner, it is very difficult to cure; at leaſt unleſs you fire it, to prevent the fuſee from going higher, and entirely depriving the knee of motion. As it is an affair of great concern, you ought not to neglect the operation of the fire whenever the fuſee begins to reach the joint.

### *Another.*

In the firſt place ſhave off the hair very cloſe, eſpecially juſt where the hardneſs is, then beat and rub it eaſily with your ſtick, for if you do it too roughly, it will cauſe an inflammation. The delicacy of the hand, therefore, is here the chief thing. When the humour is ſufficiently ſoftened, prick it all over with the point of a lancet to let out

out the corrupted blood ; then make an ointment of euphorbium, flowers of brimſtone, cantharides, and black-hellebore, a drachm of each ; powder the whole, incorporate it with oil of bays, and make a liquid ointment, which apply to the ſwelling, ſpread on tow, faſtening it on with a bandage, that it may keep there twenty-four hours.

Take great care that the horſe may not come at it with his teeth ; when the twenty-four hours are expired, take off the dreſſing, and waſh the wound with freſh water, continuing thus till it is well.

*Another for the ſame purpoſe.*

The hair being entirely ſhaved off the tumour, and the tumour ſoftened by rubbing it with your piece of wood, and pricked with a lancet, as above deſcribed,

Take a piece of rind of bacon, with a good deal of fat on it, and apply it to the part ; then preſs a hot iron againſt the rind, which will make the fat melt, and afterwards apply butter and black pitch, melted together in an iron ladle ; continue to uſe the latter once a day for a fortnight, in which time the ſlough will fall off, and then you may dreſs the wound with any digeſtive.

*Another.*

Shave off the hair, and do as before to ſoften the ſplent ; then take five or ſix bits of tile, each about

about the bigneſs of the ſplent, and make them red hot; have ready an earthen pot, with wine-vinegar, and a ſtrong piece of linen rag; put one of the bits of the tile into the vinegar, and immediately take it out in the rag, and apply it to the ſplent, holding it there till cold; uſe a ſecond piece of tile in the ſame manner, and ſo on, till you find the adjacent hairs come eaſily off in your hand. Then apply the following cauſtic, which ſhould extend no farther than the humour itſelf, and be left there, bound on, twenty-four hours:

*A cauſtic.*

Take a clove of garlic, the ſame weight of common ſalt, of pepper, and of black-hellebore, pound the whole together, and with almoſt an equal quantity of oil of bays, make an ointment, which apply to the ſplent or fuſee, and bind it on, taking care that the horſe may not get at it with his teeth. When the ſlough or eſchar is come off, take care to waſh the wound night and morning with warm wine, and a little ſugar melted in it, till it is quite well.

*Another remedy.*

After having treated the ſwelling according to the former direction, to prepare it for the medicine take roots of wild turneps or rape, cut them into ſlices as thick as your finger, and put a good many of theſe ſlices into wine-vinegar, and give them

them a gentle boil, add a handful of ſalt, and let the compoſition ſtand over the fire while you take the ſlices out one by one, and apply them as hot as you can to the ſplent or fuſee, till you perceive it come off, as in the foregoing recipe, then apply the ointment of pepper, ſalt, garlic, black-hellebore, and oil of bays, as before preſcribed, and leave it on twenty-four hours; ſupple the eſchar well afterwards with greaſy things, and it will fall off and the hair come again.

*Another.*

After the preparatory treatment, take the fineſt head of garlic you can get, boil it in olive oil, and apply it as hot as you poſſibly can upon the tumour bind it on and leave it twenty-four hours, and afterwards add every day oil of bays, till the ſplent diſappears, which it certainly will.

*Of the three kinds of oſſets.*

Oſſets are of the ſame nature as ſplents, which is the cauſe of ſome farriers miſtaking them for the ſame thing; there is this difference, however, between them, that ſplents come near the knees, and oſſets near the feetlocks; their ſeat is indifferently within or without the leg.

The firſt is the ſimple oſſet, which does not grow near the joint of the footlock or the nerve; this need not hinder any one from buying a horſe, becauſe it puts him to no inconvenience, and is only diſagreeable to the ſight; beſides, it very often goes away of itſelf, without any remedy.

The ſecond is that which deſcends into thefootlock,and hinders the motion of that joint. This occaſions a horſe to ſtumble and fall, and, with a very little work, to become lame.

The third has its ſeat between the bone and the nerve, and ſometimes upon the nerve; it ſo much incommodes a horſe, that he cannot ſtand firm, but limps on every little occaſion. This diſtinction is much like that between the three ſorts of ſplents, and as the ſame remedies will cure them both, we ſhall ſet down no other.

### *Windgalls of the three kinds.*

Before you undertake the cure of any diſtemper, accident, or infirmity, that may happen to a horſe, you ought thoroughly to know the nature of it. It is juſt the ſame with farriers as with phyſicians and ſurgeons; thoſe who ſucceed without knowing what they are about, muſt aſcribe that ſucceſs to mere chance, which might as well have run againſt them.

Windgalls, which we are now about to ſpeak of, appear to the eye much like oſſets, but are not, however,

however, juſt in the ſame places, nor do they feel like them, for whereas oſſets are hard, but windgalls give way to the touch.

Some horſes are more liable to theſe than others, and that, for ſeveral reaſons; ſome becauſe they proceed from old woren-out ſires; and others, becauſe they were worked too young; among your delicate foreign horſes, as Barbs, Spaniſh, Arabian, or Italian, when they are worked young, you will ſee ninety in an hundred loaded with windgalls, from the age of five or ſix years. But in the countries where theſe come from, they ſeldom, without the utmoſt neceſſity, ride their horſes till they are five or ſix years of age, eſpecially in ſtuds of reputation. Engliſh horſes are very ſubject to windgalls, becauſe they are all worked too ſoon; and ſometimes, becauſe they are deſcended from old decayed ſtallions.

The beſt race in England comes from Barbarian and Arabian horſes, and theſe are certainly the fineſt creatures in the world for the ſaddle; if they are not ſpoiled when young.

*A ſimple windgall.*

A windgall is a little tumour between the ſkin and the fleſh, round the feetlocks; when it appears at a good diſtance from the large nerve, it does not lame the horſe, and if he has but age on his ſide, that is if under ten years old

at moſt, he will be as uſeful as before, provided the work you put him to be not of the moſt laborious kind. However, a horſe is much better without than with even this ſort, which is called a *ſimple windgall;* it conſiſts of thin ſkins, full of red liquid, and ſoft to the touch. The remedies will come under the deſcription of the third ſort.

*Nervous windgalls.*

Nervous windgalls anſwer the ſame deſcription, only as the ſimple ones come upon the feetlocks, or a little above them on the leg-bone, in the very place of oſſets, nervous ones come behind the feetlocks, upon the great nerve, which makes them of worſe conſequence, for they never fail to lame a horſe after much fatigue.

Theſe windgalls may happen upon any of the legs, but ſome of them are more dangerous than others, in proportion as they preſs the nerve, and are capable of laming the horſe. When a horſe happens to limp with them on a journey, and you cannot poſſibly give him reſt, be ſure every time you put him up, to ſee his legs well waſhed with the coldeſt ſpring-water that can be come at, uſing a pail-full to each leg with a large ſponge; this will enable your horſe to continue his journey without limping, though it can never cure him. Take notice that windgalls are more troubleſome

bleſome in ſummer than in winter, eſpecially in very hot weather, when the pores are all open.

*Bloated windgalls.*

The third and worſt ſort of windgalls are diſtinguiſhed by this name, when they come over the hind part of the footlock, between the bone and the large nerve, and make the horſe ſo lame at every little thing he does, that he can ſcarce ſet his foot upon the ground. They appear on both ſides of the legs, without as well as within, and when you touch them with your hand or finger, they feel like a pig's or a cow's bladder full of wind.

Some have run the riſque of opening them and letting out the red water that is within the ſkin, but not one of theſe have ſucceeded. They have now and then relieved the horſe, indeed, for ſome time, but at other times they have lamed him effectually; the ſhorteſt way, therefore, is to have recourſe to remedies which may be relied on for a cure, and cannot do any hurt.

Windgalls of this ſort are more dangerous than is commonly thought, and if let alone too long, can never be otherwiſe cured than by the actual cautery, and as good farriers who know how to give the fire are very ſcarce (though they all pretend to this piece of ſkill) there is leaſt hazard run by taking the diſorder in time. The hair ſhould be

ſhaved

ſhaved off all round the feetlocks, and over the windgalls, and then make uſe of the following ointment:

Take Spaniſh-flies, euphorbium, and black-hellebore, of each two ounces, powder the whole, and make an ointment with the oil of bays and turpentine, in equal quantities; ſpread this with a ſpatula all round the footlock, and eſpecially upon the windgalls themſelves; leave it there twenty-four hours, before which time a great deal of the red water will be diſcharged; then ſcrape off the old ointment with your ſpatula, and apply freſh, continuing to do ſo every twenty-four hours, for nine days running.

The ſkin will fall off in ſuch a manner, that you will be apt to think at firſt it will never come again; but you may depend upon ſeeing it grow after ſome time, and look as well at leaſt as before. When windgalls are freſh they ſometimes diſappear, and are not ſeen again for a long while, unleſs through the ſame accident that firſt brought them, namely, too much labour.

*A way to make windgalls diſappear.*

We ſhould not ſpeak of this method, if many dealers did not make uſe of it to deceive thoſe they ſell to, for when theſe windgalls cannot be cured, they may be ſo diſpelled as to deceive a buyer. It is therefore proper to know how this

is

is done. When a jockey lights on a handſome young horſe, though perhaps all his four legs are ſpoiled, if he can but make thoſe legs carry him to market, and recommend him for a horſe of value, it is all a man of this profeſſion cares for.

If the jockey buys him in the winter he never fails at the beginning of the ſpring to ſend him to graſs; after ſome time he takes him up again into the ſtable, and with cow-dung diluted with vinegar, rubs his legs all over, three or four times a day, and in a ſhort time the windgalls diſappear. The jockey keeps this horſe always ſtill, in a ſeparate ſtable, till he lights on a chapman, and then, while he is ſhewing him others, the defective beaſt is brought in ſight, freſh and ſprightly, juſt as he comes from watering. The chapman aſks the price, the crafty jockey tells him the horſe is not his, or that he has already partly ſold him; but ſince he likes the creature ſo well, he will do all in his power that he ſhall have the refuſal of him. This moſt commonly makes the cuſtomer more eager to buy, and in this manner the Engliſh jockies, more than others, get off their bad goods. But the moſt ſure way to make a horſe firm in his legs, and cure his windgalls, is to give him the fire, in the manner repreſented in one of the ſubſequent Sections, or as follows:

*How*

*How to give a horſe the fire.*

Care muſt be taken, in the firſt place, that the perſon who gives it has a light and delicate hand, which a farrier, who works at the hammer, cannot poſſibly have; he muſt alſo have a good ſight, and be perfectly acquainted with the operation; for if he bears ſo hard on his iron as to go quite through the ſkin, he runs a riſque of laming the horſe, and if he does not give the fire enough, the windgalls will remain, and he might as well have done nothing. Let us ſuppoſe then that we have a capable man, he muſt have ſix or ſeven ſteel knives, let him heat them over a charcoal fire, and not in the forge, becauſe the intenſe heat occaſioned by the bellows, will ſcale the inſtrument, and make the edge like a ſaw, ſo that it muſt tear the ſkin; make it very hot, that it may paſs delicately over the ſkin, and feel in hand as if one was cutting of butter; when one knife begins to cool, a perſon that ſtands by for that purpoſe, muſt give another quite hot; and put the firſt again into the fire. Never go twice ſucceſſively upon the ſame line, and obſerve to take your ſtrokes downwards, not upwards, beginning in the middle and then making parallels on each ſide; continue thus till you have gone ſeveral times over each line; the firſt knife will ſcarce be enough without changing to mark all the lines out; when the fire is given ſufficiently, the bottoms of the ſtreaks appear red, or of a gold colour, and certain little drops of wa-

ter

ter begin to riſe. This is a ſignal for leaving off the operations for fear of cutting through the ſkin. The middle line ſhould not be ſo often gone over as the reſt.

The fire being given on both ſides of each leg, within and without, cover all the footlock, and a part of the nerve, as well as five lines on the ſide of the nerve, and three on each ſide of the footlock, making together nine on each ſide the leg, in all eighteen. Then take a ſmall ſponge, dipped in writing-ink, and draw it over all the lines. You muſt do this as ſoon as you can after the fire is given, and continue the uſe of ink in the ſame manner, nine days following. After that, anoint all the lines or ſtreaks with ointment as the eſchars fall off, and take care during the whole time of cure, that the horſe never comes at his legs with his teeth.

There are two things to be noted, which are of great importance; the firſt is, that the horſe muſt have reſted a long time before you give him the fire, that he may not be lame at the time of the operation, which would render your labour ineffectual. The ſecond, that only autumn and winter are proper ſeaſons for this operation, to which the great heats and the flies may be of very bad conſequence.

We adviſe no man to give the fire to a horſe of little value, becauſe the expence of it is more than an indifferent horſe is worth; for after you have

performed the operation, there is a neceſſity for his reſting two or three months without ſtirring out of the ſtable, after which he may be lead early in the fields and meadows, eſpecially if in the month of May, among the green corn, or long graſs, that his legs may be fortified by being thus ſuppled with the dew. If all this be well executed, we may be ſure at the end of ſix or ſeven months, that the horſe will have better legs than ever, and will laſt many years longer. We have horſes of great value, without any defect, on whom this operation has been performed by way of precaution, and who have afterwards been fifteen or twenty years fit for ſervice, with their legs always firm and ſound. Mr. Merrick, farrier to the late King, has done it even to horſes for his Majeſty's own riding, and with very good ſucceſs. We have followed the ſame practice ever ſince, and never found it fail.

In order to give the fire properly, the horſe ſhould be laid down, and the pot of charcoal ſhould ſtand juſt by, that the irons may have no time to cool when taken out. It is proper, alſo, to have a ſmooth piece of board at hand, to draw the inſtruments over, and diſengage any filth that may ſtick to them. The dreſſing to be uſed after the ninth day, is the following excellent ointment for burns, equally good for man and beaſt.

*An ointment for burns.*

Take a pound of the freſheſt hen-dung you can get, and mix it with a pound of ſage, chopped and bruiſed; then take two pounds of melted lard, and put all together in a large earthen pot; cover the pot cloſe, ſet it over a clear fire, and let it boil four or five hours; ſtrain it as hot as you can through a coarſe towel, and ſqueeze out as much as poſſible. Keep this ointment in your houſe, as a valuable treaſure, for it will cure all manner of burns, without leaving the leaſt mark behind.

The way to uſe this ointment upon horſes who have had the fire given them, is gently to anoint every line with it once a day, upon the end of a feather. For any perſon who receives a burn, let ſome of it be imbibed in ſoft paper, and ſo laid on freſh twice a day, if it be a part you can cover. But for the face, uſe a fine feather, and apply it five or ſix times a day. This will certainly make a perfect cure within a fortnight.

*Malanders.*

To know what the malanders are, you muſt examine the feet of a horſe, loaded with hair, for ſuch horſes are more ſubject to it than others. You will find a ſort of little ſlit in the bend of the leg, behind the knee, from which a certain humour iſſues, that is ſometimes whitiſh, and ſome

times like muddy water. The hair round it is ſtraight, and ſtands, as it were, on end; and as the humour is ſharp and ſalt, it makes the hair fall off by degrees. This diſeaſe happens often to fat horſes, and thoſe that were bred in countries where the graſs is luſcious. It is none of the moſt conſiderable defects, but worſe in ſome horſes than others, in proportion to their conſtitutions.

Jockeys and dealers ſay that it makes a horſe ſo much the better, becauſe nature thus diſcharges what offends her; and ſometimes we confeſs it is but a trifling matter; but ſtill a horſe had better not be ſubject to it, becauſe ſome are ſo loaded with humours, that they deſcend into the feet, while you are curing the malanders, and often cauſe what is called a *fig* in the foot, which is much more dangerous than the malanders, and what few farriers know how to cure, for want of experience.

Whatever jockeys may pretend, the malanders make the leg ſtiff, and take away the motion of the knee-joint, which obliges a horſe to ſtumble often, and ſometimes to fall, as he cannot bend his joints without pain; but in ſummer, this defect ſometimes goes away voluntarily, the humours being dried up by the duſt, but then the mark of it remains. In winter, when a horſe is obliged to work in mud, water, ſnow, or ice, he ſuffers many incon-

inconveniencies, which make it neceſſary to uſe gentle remedies, leſt by curing the diſtemper in one part, you drive it to another. The following are very proper for this purpoſe :

*A remedy for malanders.*

Take calcined oyſter-ſhells, levigated ; the ſame weight of wild turneps, and pound them alſo; then take hogs-lard, the weight of both, and put all together in an earthen pot, and let it boil over the fire a full hour, ſtirring it all the while, till it is cold ; when taken off, anoint the malanders with this ointment two or three times a day, and it will effect a cure. But you muſt purge the horſe before you uſe it, as well as afterwards, to cleanſe his body.

*Another remedy for the malanders, mules, and ſalanders.*

Theſe three diſtempers, though different, may be treated and cured with the ſame remedies.

It has been already ſaid, that the ſeat of the malanders is behind the knee, in the joints. We add, that the ſalanders come over againſt the malanders, in the middle of the bend of the hough ; and that mules are a kind of clefts, that come behind the feetlocks, which ſplit them quite acroſs. This laſt accident is often a matter of importance, if it be not remedied very ſoon ; for this ſlit will grow ſo deep, that it ſometimes extends to the bone, and the tendons that hold the bones together,

gether, and ſometimes a ſilander comes in the middle of the wound, looking white, like the ſmall end of a nerve, but which is neither more nor leſs than an excreſcence, occaſioned by the humours that ooze from between the bones of the joint. This often deſtroys a horſe, but the beſt way to ſave him, is to uſe theſe remedies; take oil of hemp-ſeed, honey, hogs-lard, verdegris finely powdered, black pitch, flour of brimſtone, white copperas, red arſenick, and common alum, of each two ounces; quickſilver one ounce; mix the flour of brimſtone and quickſilver, by rubbing in a mortar till the quickſilver is killed, and then mix the other things in powder, with the oil over a ſlow fire, in an earthen pipkin (avoiding the fumes) and boil it a little, and then ſtir it till it is cold.

Dreſs the horſe every day with this compoſition, till he is well.

*Another remedy for the malanders, or ſalanders.*

Take black-ſope, ointment of poplar-buds, and freſh butter, of each equal parts, mixed together for an ointment.

*Another.*

Take oil of lead and white ceruſs, of each eight ounces; common honey twenty-four ounces; put the whole into a large earthen pipkin, and let it ſtand over a gentle fire, ſtirring it perpetually

tually with a ſpatula, to prevent its boiling over, and continuing to do the ſame when you take it off, till it is quite cold. Uſe this as the preceding. Every time that you dreſs your horſe, foment the wounds well with a little warm wine and ſugar, which will keep them clean; but be as quick as you can in doing this, that the air may not have time to affect the part, becauſe that would retard the cure.

*Bow-legs.*

This accident proceeds from different cauſes; firſt, from nature, when a horſe was got by an old woren-out ſtallion; ſecondly, from his having been worked too young. Neither in the one caſe nor the other is the horſe of any value, becauſe he never can be ſure-footed; it is alſo a diſagreeable ſight, and is known by looking at the two fore-legs, ſtanding about three paces from his ſhoulders. If the knees point forwards, and his legs turn in under him, ſo that the knees come much farther out than the feet, this is what we call a bow-legged horſe. Such a horſe ought to be rejected for any ſervice whatever, as he never can ſtand firm on his legs; and how handſome he may otherwiſe be, he ſhould on no account be uſed for a ſtallion, becauſe all his progeny will have the ſame deformity.

We ſhould have taken no notice of this caſe, becauſe there is no cure for it, had it not been to prevent

prevent any perſon being deceived in making a purchaſe.

*Tottering legs.*

This infirmity, like the other, is not very eaſily diſcovered, which is often a great advantage to the ſeller; you cannot perceive it till after a horſe has galloped for ſome time, and then by letting him reſt a little, you will ſee his legs tremble under him, which is the diſorder we mean. How handſome ſoever the legs of ſuch a horſe may be, he never can ſtand well on them. You are not to mind therefore what a jockey ſays, when he talks a great deal of the beauty of thoſe limbs, for if you oblige him to gallop his horſe, or fatigue him pretty much (which is commonly done, in order to try the creature's bottom) you will, in all probability diſcover this defect, unleſs you ſuffer the groom to gallop him to the ſtable door and put him up in a moment, which he will certainly do, if he is conſcious of it, while the maſter has another horſe ready to ſhew you, in order to take off your attention from what he is afraid you ſhould ſee. There is no more cure for this, than for bow-legs.

*A horſe that forges.*

What we mean by a horſe that forges, is one that when he walks or trots ſtrikes the toe of his hind

hind feet againſt the corners of his ſhoes before, which occaſions a clattering noiſe as you ride; this proceeds only from the weakneſs of his fore-legs, he not having ſtrength in them to raiſe them up quick to make way for the hind ones. A horſe of this kind can do no great ſervice, and the dealers, to get rid of him, will make abundance of pretences; if he has been juſt ſhoed, they will ſcold the hoſtler for having ſuffered him to have ſuch long ſhoes, and if his ſhoes are old they will tell you he is juſt arrived from a long journey, and very much fatigued; you muſt not be over credulous, therefore, to any thing a jockey affirms; for all they ſay is uſually with an intent to deceive; and it is very certain, that a horſe who forges can never be ſure-footed, any more than one who has tottering or bow-legs.

*A blow on the nerve.*

This accident may happen to the beſt horſe in the world as well as to the worſt, if the perſon who rides him does not know how to manage and ſupport him juſtly. In hunting, eſpecially, or in ſwift courſes, when you are obliged to ride over ſandy or ploughed grounds, or ſuch as are wet and boggy, if you are not careful to ſupport him with your hand, his fore-feet will ſink in, and as he has not time to raiſe them ſoon enough to make way for the hind ones, the toes of theſe come againſt

the large nerves before, that lie between the knee and the back of the footlock, and ſtrike them with great violence; but as the blow does not break the ſkin, nothing at firſt appears, only in the evening or the next day the horſe grows lame, without your knowing the cauſe of it; you muſt examine him, therefore, all over, drawing your hand firſt from the joint of the knees downwards, and taking up the nerve with your fingers in order to feel it all the way; if he ſuddenly ſnatches away his foot, imagine you have found the ſeat of his diſorder, and that it is the ſhoe, or blow on the nerve; if you diſcover it ſoon, proceed as follows:

Take ſpirit of turpentine and wine vinegar, an equal quantity of each; beat them together, then take a large piece of ſponge, ſlit it almoſt through the middle, and having dipped it in the compoſition, apply it to the nerve, covering it quite from top to bottom; then take an ox or cow's bladder, and bind it over the ſponge with a linen ſwathe; let this remain twenty-four hours, and then repeat the ſame dreſſing three times, on the three ſubſequent days, taking care never to bind the nerve too hard; this will quite remove the otherwiſe dangerous malady.

*Another*

*Another remedy.*

You muſt ſhave off all the hair along the nerve, and then rub it well with a wiſp of ſtraw, in order to heat it, and apply ſome of the following ointment:

Take black-hellebore, euphorbium, and Spaniſh-flies, of each two ounces; oil of bays, four ounces; powder the dry drugs, and mix them with the oil for an ointment, which apply to the whole nerve, but moſt plentifully where the hurt was received; repeat the ſame dreſſing twice in one day, which will draw out a red humour, and then continue to uſe it once a day, near a week longer, by which time the nerve will look red, as if it was raw; you muſt not be ſurpriſed at this, becauſe both ſkin and hair will come again as before. If this ointment be well applied, and the horſe left three weeks or a month in the ſtable, without ſtirring, his leg will look as handſome as ever.

This ointment is alſo good for woren-out or ſurbated legs, the nerves of which are hard and ſwelled; but if theſe diſorders are of long ſtanding, and the nerves are entirely ſpoiled, the ſhorteſt way is, to give the fire; making ſix lines on each ſide of the nerve, three on each ſide of the part that ſurrounds the footlock, and one on the middle, making ten lines on each ſide; this is the

only certain remedy, if the fire be well given, for wounded or woren-out nerves. But we are to inform you, that always before you give the fire to a horſe, you muſt let him reſt three weeks or a month in the ſtable, and during that time, you muſt prepare the leg with good fomentations of marſh-mallows, for the operation; three or four days before you perform it, cleanſe the leg from all filth with water and ſope, for though the fomentation ſupples the nerves, they always leave a dirt behind them. As many perſons will not conſent to give the fire for fear of diſfiguring their horſe, and becauſe all who pretend to it are not capable of this operation, the reader may find here a great number of remedies which we have tried, in order to avoid performing it;

*A remedy for the nerves.*

Rub your horſe's legs all over with your hand, in order to warm his nerves; then bleed him in the bow-vein, and rub his legs again with his own blood; afterwards uſe the following compoſition:

Take black-pitch, black-roſin, Burgundy-pitch, Venice-turpentine, oil of bays, bean-flour, roſe-leaves, camomile-flowers, cypreſs-nuts, dragons-blood powdered, of each two ounces; boil the whole a quarter of an hour over a gentle fire, in three quarts of wine, and with this rub the nerves twice

twice a day for fifteen or twenty days following, in which time you will ſee them perfectly cured.

*Another.*

Take oil of bays, common honey, turpentine, bole-armenic, black-ſope, mutton-ſuet, of each two ounces; put the whole into a pipkin, and boil it a quarter of an hour over a gentle fire, ſtirring it all the while; apply this to the nerves moderately warm, with tow and a proper bandage, and repeat it till the ſwelling goes down; then to perfect the cure have recourſe to the following fomentation:

Take roſe-leaves, camomile-flowers, green aniſe, green ſage, pomegranate-bark, wormwood, and gall-nuts, of each two ounces; roch-alum and white-vitriol, of each one ounce; reduce the whole to a powder, and put it into a kettle, with about a pail-full of rain or river-water, which boil to half the quantity; then with a ſponge bathe the nerves and legs of the horſe twice a day, till he is perfectly and manifeſtly well.

*A remedy for ſwelled legs.*

There often happens a ſort of ſwelling in the legs of hunters by a thorn that runs into them in the chaſe; this ſwelling uſually appears after the fall of the leaf; when you feel with your hand that the

the nerves are ſwelled, and that the ſwelling is occaſioned by a thorn, make uſe of the following remedies:

Take an equal quantity of white-wine and oil of olives, and boil them over a gentle fire in a pipkin, till they are reduced to half; rub the ſwelled legs with this againſt the hair twice a day the whole length of the nerves. The hair of the leg will all come off, but it will grow again, and the leg be as ſound and as handſome as if it had never been diſordered. The horſe during the courſe ſhould have a whole month's reſt.

*Another.*

Take oil of olives and leys of red-wine, of each alike, mix and beat them well together to reduce them into an unctuous ſubſtance, with which rub the horſe's legs night and morning.

*A remedy for a horſe that has got thorns in hunting.*

Take the ſkin of an adder and apply it upon the place where there appears to be a thorn, and at the end of three or four days the thorn will come out without any other remedy. But if thorns have been long in the legs of a horſe, and are got in far, after the application of the adder's ſkin, uſe the following ointment:

Take gooſe-greaſe one pound, Burgundy pitch, gum elemi, of each ſix ounces; yellow wax, four ounces; white ſage-leaves one handful; boil the whole

whole together till it comes to an ointment, with which rub the ſwelled legs; then heat an iron bar red hot, and hold it to the leg all round, to make the ointment penetrate, but not too near as the farriers commonly do, becauſe that contracts the nerves and makes the remedy worſe than the diſeaſe. You need apply this ointment but once in two days; and, if the application is made with judgment, it will produce wonderful effects.

*Another.*

Take mallow roots, well pounded, and ſteep them eight days in a pail of water, then add two pounds of flour of linſeed, and boil the whole together over a gentle fire, till it becomes like a haſty-pudding; ſtrain it warm through a courſe towel, and ſqueeze out all you can; then add a pound of oil of olives, and keep it ſtirring till quite cold, and of the conſiſtence of an ointment; keep this in a pot cloſe covered, and rub the legs with it once a day, till they are cured, which will be very ſoon.

*Another remedy for the malanders and ſalanders.*

Take comfrey-root, and lead-ore, of each four ounces, honey half a pound; put them together in a varniſhed pipkin, and melt them over a gentle fire, ſtirring all the while, and continuing to do ſo when the compoſition is taken off till it is quite cold. Put ſome of this once a day upon the

the malanders or ſalanders, but take care to cleanſe the wounds before you apply it; there is no bandage wanting, only put it on with your finger or a ſpatula.

*A blow between the footlock and the heel.*

Theſe blows are received in the ſame manner as thoſe on the nerve before deſcribed; the only difference is, that the ſeat of the one is higher than that of the other. The ſeat of the blow we are now ſpeaking of is between the footlock and the heel of the fore foot. As this is a very ſenſible part, ſuch accidents are often dangerous. The nerves which contribute to the motion of the joint run along juſt in this place; that is, there are a great number of ſmall veſſels, veins, and arteries, which upon every rude knock they receive may lame a horſe.

To know when a horſe is hurt here, draw your hand along the large nerve, pinching it as you proceed; if you find no ſenſibility there, carry your hand to the joint that is between the footlock and the heel, and if you have then hit upon the part, the horſe will catch away his foot. Having found what ails him, begin the cure with the ſame remedies that are preſcribed for a blow on the nerve when there is no wound. If the blow be upon the heel itſelf, and the ſkin a little broke, you have only to waſh the part with warm wine, and a ſmall matter of ſugar melted in it, putting

putting over it a little tow and a bandage. On the deficiency of wine and ſugar waſh the wound with urine, for with ever ſo little dreſſing, if you keep the air from it, it will heal; ſpirit of turpentine will do very well in this caſe; or, if you are in the country, the juice of the herbs arſe-ſmart, celandine, or nettles, either of the three; if you can get none of theſe take only a little cannon powder, fill the wound with it, repeating this three or four times, till all the inſide of the wound is burnt as if you had made it with a hot iron, and then dreſs it with urine, tow, and a bandage. If the ſore through neglect is ſuffered to grow very bad, you muſt dreſs it with a digeſtive made in the following manner:

*A digeſtive.*

Take four ounces of Venice turpentine, and two yelks of eggs, rub them together in a mortar very well, and put a ſpoonful or leſs of brandy, and mix the whole for an ointment. If there be proud fleſh, ſtrew it over with burnt alum, or rub it with blue vitriol, or lapis infernalis, or uſe any one of the compoſitions mentioned in this book for that purpoſe.

Some diſorders to which we give other names are occaſioned by theſe blows, and, among others, what the French call *javarts*, that is, ſwellings in the paſtern, are often owing to it, though they

ſometimes proceed from natural cauſes, we ſhall ſpeak of the three ſorts of theſe in their order.

*A ſimple javart, or core in the paſtern.*

As nothing ſhould be undertaken in medicine before the conſequence of it is known, we ſhall firſt give the idea of a javart: it is a humour that comes behind the footlock above the heel, and obliges a horſe to limp extremely; there appears from the firſt a ſmall ſwelling which is very ſenſible to the touch, and the ſooner you can bring it to ſuppuration the better, in order to diſcharge the foul matter; for no ſooner is he rid of that, but the horſe finds himſelf relieved; whereas if it continues there long, he runs a great riſk of his life; inſtead of ſimple it then becomes a nervous javart, which is no eaſy thing to cure. But we proceed to the ſimple ſort, which may be cured by the following remedies:

*A remedy for a ſimple javart.*

Take the ſame drugs that are uſed to bring the glands to ſuppuration in a horſe that has the ſtrangles, or in the room of them lily roots roaſted in wood embers, put them in a mortar with ſuch oil as you can get (rape or linſeed oil are the beſt) and reduce the whole to an ointment, which apply upon the javart; it will ſoon draw out the matter and then heal it like another wound.

*Another*

*Another way of curing it.*

Before you undertake to cure a javart you muſt carefully examine the conſtitution and temperament of your horſe; if he is over-charged with humours, you muſt purge him for ſome time, to turn them from that part.

*Plaſter to draw the matter from a javart.*

Take four ounces of hogs-lard and melt it in an iron ladle, then take four ounces of honey and boil it up ſuddenly, and add two ounces of bean flour, and ſet the whole over the fire, ſtirring it till it comes to a pappy conſiſtence; add afterwards the yelks of three eggs, and when the whole is well incorporated together, ſpread it upon tow and apply it to the tumours; renew this dreſſing every twelve hours till the matter is diſcharged; then put a tent of tow with a good ſuppurative into the hole, to draw out all that remains; when nothing more comes, put a little powdered alum round your tent to keep down the proud fleſh; after which you may dreſs it with any thing proper for healing of wounds, but take great care to keep the air from it as much as poſſible.

*Horny javarts.*

Though all theſe ſwellings proceed from much the ſame cauſes, there may be this difference ob-

ſerved between them: the ſimple javart comes only in the joint between the heels and the hind part of the footlock; the horny ſort comes nearly in the ſame place, but the hole forms itſelf between the heel and the horny crown of the foot. Many horſes have been loſt by this accident, either through negligence, or through leaving the wound too long expoſed to the air in dreſſing, or through the omiſſion of their neceſſary ſcourings. The beſt remedies at ſuch times are found ineffectual, and even horſes that have not died of it have been ſix months or ſometimes a year under cure. To prevent theſe accidents, take leeks, heads and greens together, chop them to pieces and beat them up in a mortar with muſtard and hogs-lard, the ſame quantity of each as of the leeks, make a cataplaſm and apply it to the javart, in order to bring it to a head and draw out the matter; then heal the wound with drying powders, taking great care to keep out the air.

If the javart be of long ſtanding, take ſpirit of turpentine and Succotrine aloes in powder, of each equal parts, mix with them as much loaf-ſugar as will make a tincture, to dreſs the wound with till it is well. If the horſe has had it ſix months or a year, and proud fleſh grows over the horn, you muſt cut off as much of it as poſſible with an inciſion knife, and then give the fire to the part, making lines from top to bottom over all the

the ſwelling, from the hair quite to the horn; this will ſearch the wound and fetch down the proud fleſh which you could not cut off. It is indeed the only way to do it, and will ſucceed when all the drugs of an apothecary's ſhop are found inſufficient.

The operation of the biſtory and the fire being over, apply to the wound a plaſter made in the following manner, and continue to renew it for ten or twelve ſubſequent days:

Take honey and Venice turpentine an equal quantity of each, beat them well together, and apply this compoſition to the wound, leaving it there under a good bandage three whole days, then repeat the dreſſing, and continue it with bandage each time as long. If you perceive any proud fleſh to ariſe, ſprinkle on it a little burnt alum, and dreſs it with the ſame plaſter, only adding a ſmall quantity of Venice turpentine; you muſt always keep the hoof greaſed with hogs-lard to preſerve the crown from contracting, and if, through the length of the diſtemper, the crown ſhould be ſtrained or diminiſhed, make lines upon it with your fire-knives all round, drawing them from top to bottom. If the contraction be extreme, without heſitation take out the ſole of that foot, and ſplit his frog to enlarge his foot; you need make the dreſſings of turpentine and greaſe a little warm, nouriſhing the hoof well with oil or hogs-lard.

*Another*

*Another remedy.*

Take hogs-lard, and a quarter of the ſame weight of fine baſket ſalt, mix them together and leave them on the ſore twenty-four hours; repeat the ſame till the matter is diſcharged, and then any ointment will effect a cure.

*How to know a nervous javart.*

This comes juſt in the middle of the joint between the heel and the back of the footlock. If it be taken in hand at the firſt the cure is eaſy, but if you wait till an ulcer is formed, a ſmall ſilander will at the ſame time grow to the nerve, and be very difficult to cure: the reaſon is, becauſe you muſt not uſe violent remedies for fear of hurting the nerve, and medicines that are ſoft only nouriſh the ſilander; after the common applications therefore for other javarts, you may have recourſe to good digeſtives, and inſtead of brandy uſe ſpirit of turpentine, mixing with it powder of calcined alum, more or leſs, as the occaſion requires; when the ſilander diſappears, complete the cure with digeſtives only.

*For a prick in a horſe's foot.*

This diſorder is eaſily enough to be known, and therefore requires no deſcription. If the hurt be freſh received, make the hole as large as you can in pulling out the nail, and dreſs it with ſpirit

ſpirit of turpentine covered with tow. If the horſe is ſtill lame at the end of twenty-four hours, repeat the ſame dreſſing, and ſo continue to renew it daily, till he is well; for want of ſpirit of turpentine, you may uſe the balſam traumaticum, or oil of vitriol.

*For an old prick you may make a tincture of Succotrine aloes in this manner:*

Take Succotrine aloes, fine ſugar, of each half an ounce; oil of turpentine three ounces; mix them well and apply it. If there is a ſilander at the bottom of the hole, which you cannot get off, put upon it a little powdered ſublimate, and the tincture over that; obſerve always to put a good defenſative round the crown, for fear the inflammation ſhould throw any matter upon it, which might ſever the foot from the hoof, and conſequently would ſpoil the horſe. Nothing ſhould be more regarded than this, nor than keeping the hoof always ſupple, as before deſcribed.

*Another remedy for an old prick.*

Steep Roman vitriol in brandy till you make it quite blue, and put this once a day upon the hole till it is well; this liquor will keep a long time, and is good for all wounds where there is any foulneſs.

*A halter-caſt.*

What we call a halter-caſt is when a horſe entangles his leg or his paſtern, either behind or before, in the rein of his halter. This accident is uſually moſt violent when it happens to a hind leg; the horſe, thus hampered, flings about, and cuts himſelf in the joint between the paſtern and the footlock.

If the wound is recent, how great ſoever it may be, provided no nerve be cut that is eſſential to the motion of the joint, nor any vein, the danger is but trifling, and a cure may be effected by only raw yelks of eggs, faſtened on with a bandage, and renewed every twenty-four hours. In ſlighter caſes you need only apply the egg with your finger, night and morning; but if the nerves or veins have been damaged, there muſt be a good digeſtive to heal them, and great care to keep out all air. The ſame digeſtive, or even ſome of the remedies preſcribed for javarts, after they are opened, may ſerve.

*Scratches or chaps.*

Horſes are more ſubject to this diſorder in winter than in ſummer, becauſe their ſkins are then more tender, and they are obliged to work in water, ice, and mud half frozen, which often makes the ſkin break behind the joint, ſometimes upon the paſtern, ſometimes higher, and now

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and then upon the footlock; it is not a very dangerous caſe in itſelf, but exceedingly troubleſome upon a journey: however, if you can keep your horſe cloſe in the ſtable, and preſerve the ſcratches from air, you may ſoon cure him with any aſſuaging remedy whatever. It is quite otherwiſe with the following accident, which demands much more attention, and that you ſhould have recourſe to many remedies ſet down in the article of *javarts*.

*Mules.*

Mules, or tranſverſe mules, very much reſemble ſcratches, being clefts athwart the ſkin behind the footlock; they happen oftener in the hind legs than in the fore, and are known from ſcratches, by a kind of whitiſh matter, ſomewhat like muddy water, that iſſues out of them; the ſame may indeed be found ſometimes in ſcratches, but then they never go deeper than the ſkin; whereas mules are much deeper, for if you take a ſtraw and probe one of them, you will find it go in above two fingers' thickneſs without forcing the orifice, entering between the bones and the joint. While this wound is under cure, the horſe muſt never go out of the ſtable, nor even to the farriers to be dreſſed, becauſe the joint ſuffers much in walking, and the cleft grows larger, which takes away the effect of the beſt remedies. Uſe the ſame remedies here as in ſwellings of the paſterns or javarts, and eſpecially the tincture of aloes and ſpirits of turpentine

tine; and be ſure to put over the tincture a good defenſative, to prevent any inflammation that might otherwiſe come, and to faſten it with a bandage five or ſix times double, to hinder any motion of the footlock. You may complete the cure with a digeſtive.

*Maltlongs or Maltworms.*

This is moſt commonly a humour inherent in the horſe's nature, and its ſeat is on the fore part of the foot above the crown; that is, under the front of the footlock; it appears in a ſort of itching ſcab, about an inch in diameter, which makes the hair come off the part, and the matter that comes from it is very ſtinking, and troubleſome to the horſe. Many ſpeak of it as a trifle, but few know how to cure it. There is, indeed, occaſion to have recourſe here to a cauſtic, in order to fetch off the ſcabby excreſcence, which is in fact a kind of proud-fleſh, not eaſily eradicated; neither the inciſion knife nor any other ſharp inſtrument is half ſo effectual to this end, as the cauſtic preſcribed in the preſent Treatiſe.

Having got off a ſcab about as big as half a nut, if no more proud-fleſh appears, you may dreſs it like a common wound.

This diſeaſe ſeldom happens to ſaddle-horſes, but to large draught cattle that are loaded with hair, and conſequently full of humours, unleſs any ſaddle-horſe was brought up or is fed on fat marſh

marſhy ground. If the maltlong be neglected, it cauſes another and worſe accident, which is what we call a *cloven* or *ox's-foot;* the matter running down from the maltlong, between the foot and the horn, occaſions the hoof to cleave in the middle, upon the fore part.

*Deſcription of the Maltlong.*

This diſtemper comes, as we have ſaid, upon the coronet of a horſe's foot, that works in mud; it often diſunites the horn from the foot, and ſometimes makes the hoof fall off; this diſeaſe appears more in ſome ſeaſons than in others, for it breaks out afreſh when the wheat begins to ſprout and is in flower; at all other times, you ſee only a little ſcab, as we before called it, which gives the horſe no trouble. Dealers and jockeys take the favourable ſeaſons to ſell off their horſes that have it, and only tell their chapman, that it is a blow, which the horſe gave himſelf by accident, and that it is merely owing to the negligence of the farrier, or hoſtler, that it is not yet well. The deception, however, appears when the fatal ſeaſon comes again.

*A remedy for the Maltlong.*

If the foregoing remedy, though very good, did not ſucceed, give the fire in the following manner: You muſt have the ſame ſort of knives that were before deſcribed in the article of windgalls, and having heated them, cut the maltlong through in

the middle, deſcending toward the hoof, and make two other parallel lines, one on each ſide; then apply the following compoſition;

Take turpentine, honey, black-roſin, of each two ounces; roch-alum powdered, one ounce; mix the whole together, and melt them in a pipkin to an ointment, with which dreſs the wound immediately, and repeat the dreſſing every twenty-four hours for eight or ten ſucceſſive days; every time you dreſs it, have ready a little warm wine, with ſugar melted in it, for a fomentation, and when the wound is ready to heal, burn an old ſhoe or two, and mix the aſhes with brandy to bathe and dry it, or you muſt dry it up with calcined alum, or a little digeſtive ointment, till the ſkin and hair come again as before.

*Of a cloven or ox's-foot.*

When a horſe has his feet cleft in two from the crown down to the toe, it is very difficult to join the two parts again; this is therefore a very bad caſe; the beſt way to proceed, is firſt to cover all the horn of the foot with any greaſy ointment, and fill the inſide of the hoof with the ſame, in order to ſoften the horn; you muſt repeat it three or four days running; then take a cobler's awl, about the ſize of a ſtocking-needle, and heat it in a charcoal fire, which you muſt have ſtanding by you; pierce both ſides of the horn very tenderly

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in three or four places, ſo that the holes may meet exactly, which muſt be a work of time, becauſe an awl will not long keep hot; then put a braſs wire through each pair of holes, and twiſt the ends together tight with pincers, in order to cloſe up the cleft as much as poſſible; you muſt then have three or four pieces of iron, made in the form of the letter S, and faſten them on hot, between the ligatures of the braſs wire, which will keep the hoof firm and cloſe; three or four weeks will make the horn hold together, but the horſe ought to be kept three or four months before you work him.

Mules are very ſubject to this accident, but with this difference from horſes, that though the cleft appears the ſame, it is not ſo deep, and does not hinder them from working; we do not, however, adviſe any one to buy mules that have it, becauſe in proceſs of time their feet may open quite to the quick, and a mule as well as a horſe may loſe his life by it if not well treated.

### *Of a ſeam.*

What the French call a *ſeam*, proceeds from different cauſes, as firſt, from the extreme dryneſs of the foot, when there has not been care taken to keep the hoof greaſed and nouriſhed with a proper ointment, and ſometimes, with cow-dung and greaſe. It happens chiefly to horſes that go little

little abroad, and are taken out in ſummer in extreme dry weather; you ſhould always refreſh the feet therefore on ſuch an occaſion. It may proceed ſecondly, from a diſorder within the foot on the ſide of the frog, and which, as it could not make any other way, cleaves the horn within or without near the heel, proceeding from the crown to the very bottom; when the foot is divided thus on the ſide as in the ox's-foot, it is in the middle, there often comes out blood as the horſe walks or trots. Different perſons treat this diſtemper in different manners, but though we ſhall introduce ſeveral remedies; yet we prefer that of giving the fire; as in the preceding article of cloven feet, with this difference only, that there is no need here of the braſs wire, the iron S being ſufficient to cloſe up this cleft. If the operation be well performed, and the foot afterwards well anointed with hogs-lard, the diſorder will never return, and the horn will grow ſtronger and harder in thoſe places than ever it was before. You are firſt to prepare the hoof for two or three days with ſome greaſy ointment, and then to apply three or four hot S's acroſs the cleft, one under another; if you can then excuſe your horſe a month or ſix weeks from working, you will ſoon ſee him perfectly well, and in no danger of the ſame accident for the future; but, if you are obliged to work ſuch a horſe within a fortnight after you have given him the fire, you muſt have

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the corner of the ſhoe cut off on that ſide where the diſorder was, ſo that that quarter of the heel may not bear upon any thing, becauſe otherwiſe the cleft might open again, and all you have done be to no purpoſe; the ſhoe to be uſed in this caſe, and that wants one of its brancles, is called by ſome *a half-ſpectacle*, and by others *a half-ſlipper*.

*A quarter-ſeam.*

The ſeam, as has been ſaid, comes on the fore but never on the hind feet; it often makes a new quarter, and then we call it a *quarter-ſeam*. It proceeds from the alteration and dryneſs of the hoof, and is known only by the horſe's limping, and having his hoof cleft from the top of the crown to the very bottom, either on the out or the inſide; it cauſes very great pain, and often happens to horſes of the manage, who never go in the wet, as well as to thoſe who are confined long in the ſtable; the hoofs of all theſe therefore ſhould be often ſupplied with greaſy ointments, and the inſide filled from time to time with clay or cow-dung.

*A remedy.*

Dip a pledget of cotton in ſpirit of wine, and lay it along the cleft of the ſeam, then put over it the following plaſter, made of new wax and ointment of poplar-buds, the ſame quantity of each

each melted together. The ſpirit will unite the horn, and the plaſter will take away the inflammation. Put on a freſh plaſter every twenty-four hours, and the ſeam will ſoon heal and the horſe be well enough to work.

*Another.*

Take two large adders, throw away their heads and their tails becauſe they are poiſonous, then cut them in ſlices, and put them into an earthen-pot, with a pound of oil of olives; cloſe up the pot well, and put it into a kettle-full of water, but ſo as not any may get into the pot; boil it till what is in the pot is reduced to an unctious conſiſtence, and uſe this ointment every day upon the ſeam till it is well, which will not be very long.

*Another.*

Cleanſe the ſeam well by waſhing it with warm water, and afterwards with brandy, ſprinkle upon it orpiment in powder, and over that the yelk of an egg boiled hard; then bind up the foot and keep it two days without opening; you will ſcarce be able to ſee, at the end of that time, that there was any ſeam. Theſe are excellent good remedies when you want to ſell a horſe; but if you would keep him, the ſureſt way is to give the fire.

*Of*

*Of the bleyme.*

To know when there is a bleyme, you muſt unſhoe the diſordered horſe, and pare his foot very neatly. Upon one of the inner quarters, near the frog, you will ſee a red ſpot like corrupted blood, which will ſometimes bleed with the very paring; this is a ſign that the bleyme is very violent, and let ſuch a horſe work ever ſo little, eſpecially if it be in ſummer, he becomes lame; but keep him ſome time idle in the ſtable, and he will not limp, unleſs he has been newly ſhod. Few old horſes are ſubject to this accident; nor is the caſe very dangerous when viſible, as here deſcribed; but when it is ſo forward that you can hardly ſee it, and has no room outwardly, you muſt divide the ſide of the hoof, agreeable to what was before ſaid. Many farriers pretend to cure a bleyme by paring the hoof, and digging it down with their buttreſs, applying afterwards certain remedies to prevent an inflammation that may enſue. We own that a horſe after this ceremony may ſeem to be relieved for the preſent, but when he has continued ſometime without being ſhoed, he begins to limp again, and let him work ever ſo little, the bleyme will be as bad as before. There have been people ſo ignorant as to unſole a horſe in this caſe, without operating on the ſeat of the bleyme, but in ſuch a horſe too the bleyme ſoon

grows as violent as ever; whereas the following remedy is infallible and will make a perfect cure.

*A remedy for the bleyme.*

Take cow-dung, pork-fat, turpentine, and roſin, of each half a pound, a quarter of a pound of linſeed, and half a pint of oil of any ſort you can get; melt the whole together in a pot, and apply ſome of this compoſition as warm as the horſe can bear it to his foot, binding it on with tow and ſplinters; repeat this every twenty-four hours, till the horſe limps no longer, which probably may be twelve days or a fortnight; you will then never ſee any more of the bleyme.

*Another.*

When you have pared the horſe's foot as deep as you can, eſpecially juſt in the ſeat of the bleyme, melt ſealing-wax upon it three or four days running, applying after each time ſome of the above compoſition. The latter, but not the wax, muſt be continued till the horſe limps no longer.

This method is equally good with the former, and either of them will ſometimes do when the other fails. The more lame a horſe is after this operation, the more certain you may be that this diſorder will never return. If they both fail for want of ſkill or experience in him that uſes them, the

the ſhorteſt way is, to unſole the horſe and dreſs the bleyme according to the preceding directions.

*How to unſole a horſe for a bleyme or any other accident.*

Before you attempt to unſole a horſe, you muſt prepare his foot well by ſoftening his hoof with an ointment of hogs-lard and cow-dung; then, in order for the operation, take a cord about half as thick as one's little finger, and make a ligature about the joint between the foot and the foot-lock, to keep back the blood, that you may ſee the ſole the better; then cut the ſole all round with your buttreſs, and when it is quick detached, you may take it off with eaſe. This being done, untie the cord, and let the blood run about a quarter of an hour, after which take up the foot and renew the ligature; put the ſhoe on as before, faſtening it well with five or ſix nails, and then waſh the inſide of the foot with ſalt and vinegar, or ſalt and brandy, or for want of either, with freſh human urine, apply afterwards honey and roſin, an equal quantity of each, melted together, with a ſmall piece of lime, filling the foot with tow bound on with ſplinters, to keep down the ſole; but take care you do not hurt it by binding them too tight. You muſt put alſo a defenſative round the crown, for fear the humours ſhould fly thither; you may make it as follows:

*A defenſative to be uſed when a horſe's ſoles are drawn.*

Chimney wood-ſoot, two pounds; turpentine, pitch, and honey, each half a pound; melt the whole together in a pot, and then add about a quart of vinegar, in which the yelks of ſix eggs have been beat up; apply ſome of this compoſition upon tow every twenty-four hours, continuing it for eight or ten days, and after that you need only dreſs the ſole with turpentine and tow till it is hard and firm, which will be in twenty or twenty-five days; be careful, when you leave off the defenſative, to keep the hoof well ſupplied with ſome greaſy ointment, that the horn may never be dry till the cure is effected.

As there are other accidents beſides bleymes that may make a horſe lame, and do him a great deal of damage, eſpecially if he be fat and full of humours (though nothing perhaps may appear, on account of the fine make of the body and legs) we proceed to give ſuch preſcriptions as may be of general utility.

*New frogs or fruſhes.*

It often happens that a horſe full of humours has a new frog, which many people call a *corrupted frog*, becauſe in changing the horn that encompaſſes it, it corrupts in ſuch a manner as to ooze out a ſtinking moiſture, and by degrees it all rots away. If a horſe is not bled in proportion to the

the humours that affect him, there comes another great diſorder, and out of a hundred farriers, ſcarce ſix can be found that know how to cure it; this is called *a thread*, and by the French *crapeau*, and may be known and cured by the following direction:

*A remedy for drying off corrupted frogs.*

Take roch-alum, green and white-copperas, and verdegris, all finely powdered, of each two ounces; infuſe them cold twenty-four hours in a pot, with a quart of wine-vinegar, and with a piece of cotton or a ſponge dipped in this infuſion, waſh the fruſhes twice every day.

When you have not the above drugs, take ſome of the aquafortis which a goldſmith has uſed to whiten his work, and uſe it alone in the ſame manner as the foregoing compoſition; you may have it for aſking for, the workmen always then throw it away, as having loſt its ſtrength.

*Another remedy for a new or corrupted frog.*

Take aqua-infernalis and uſe it in the ſame manner as the two preceding liquors, only not ſo often. The manner of making this water follows:

*Aqua-infernalis.*

Take verdegris and Spaniſh-flies, of each one ounce; Venetian ceruſs, two ounces; powder the whole

whole, and put it into a bottle of brandy, and a pint of vinegar; boil this in a pipkin over a gentle fire, till it is half waſted, and then uſe it as occaſion requires.

*Incaſtellated or narrow-heels.*

Many perſons make no difference between incaſtellated heels and heels that are cloſed up; the latter may happen to the beſt of horſes, and is often occaſioned by the fault of a farrier who knows neither how to pare nor to govern a horſe's foot; for a horſe that has the fineſt feet in the world, may have his feet cloſed up in four or five times ſhoeing, when the farrier, by an injudicious application of the ſhoe, takes away all the force of that part; we will treat therefore, in the firſt place, of theſe cloſe heels, and then of thoſe that are incaſtellated, they being quite different from each other.

When a horſe has his heels cloſed, you muſt begin the cure by ſoftening his horn all over every day with foot ointment; put a bandage about it, which you may make with three or four liſts of cloth ſewed together, in order to render them as broad as the hoof; you muſt alſo put to it cow-dung, night and morning, and continue both for eight days. Then let the horſe be unſhoed, and his feet well pared, without dividing the fruſh from the heel, which is a great error, though moſt farriers

uſually

uſually practiſe it, in hopes, by that means, to enlarge the heel; becauſe moſt authors who have treated of this diſorder, have ſpoke of opening the heels without telling how it ought to be done. Having proceeded thus far, before you put on the ſhoe let three lines be made on each ſide of the foot with a proper inſtrument, from the crown down to the bottom of the hoof, at the diſtance of about a finger's thickneſs from one another; cut them almoſt to the quick, and then put on a ſhoe made in the following manner:

It muſt be very thick within and very thin without, we mean, in the braches, that ſo if the heels bear upon the ſhoe, the horn may ſlide under the brach without, in proportion as it grows. As ſoon as the lines are made, apply to them ſome of the foot-ointment, and rub it all round the hoof, proceed thus for two or three ſhoeings, allowing about a month or ſix weeks between each, and by theſe means you will reſtore the feet. Many object againſt the length of this proceſs; but the horn of the horſe's foot does not grow ſo faſt as a man's beard; if it be a fine horſe, worth the labour and expence, you need not grudge the time allowed to make it as good as before.

## *Of incaſtellated feet.*

We muſt firſt inform you what is meant by an incaſtellated foot, that you may diſtinguiſh it from

a narrow

a narrow or close heel, before you undertake the cure.

An incastellation seldom comes but upon fine horses, as those of Spain, Italy, Portugal, and Barbary, or upon such as are brought up in high grounds that are dry and mountainous; such horses are liable to have their feet very hollow, with small and narrow frogs, which, though it be a good quality in a horse, may, like other things, extend to excess. It also happens sometimes through the fault of farriers, when they hollow the foot too much and divide the frog from the heel, which by degrees, and in course of time, occasions the frog to become so narrow, and the two quarters of the heel to join so close, that it is difficult to see their separation behind, so instead of two heels there appears to be as it were but one; this is what we call *incastellated heels*; you may often see them in the riding academies, and among managed horses who are kept long without shoeing; it frequently happens that the riding masters do dot perceive it, perhaps through ignorance, or because they think themselves above such matters, which they look on as the farrier's business; they trouble themselves about nothing but teaching to ride, and when they have shown you how to manage a horse in all his airs, they persuade themselves they are great men in their way, but when such men are left to themselves, and have the charge of conducting any grand equipage, it

makes

makes them aſhamed to be obliged to own they know nothing of the matter.

To proceed to the cure of an incaſtellated horſe, you muſt begin by preparing his feet, in order to make them tender, juſt as you do in the foregoing caſe of cloſed heels, then have a ſhoe made in three parts, ſomething like one that is adapted to all feet, which we carry with us upon a journey, or in time of war where there is a large equipage to conduct, but with this exception, that the ſhoe for all feet opens and ſhuts only in the middle, and this does ſo in two places; the toe makes one of the three pieces, and the two branches the others; the piece before muſt be punched quadrangularly, in order to receive the nails in form of a ſquare, and every branch muſt have two holes for two nails, which make eight in the whole; the deſign of it is, to open the heel every dreſſing after you have unſoled the horſe.

You muſt obſerve here, that the frog ſhould be ſlit quite down between the two heels, and to the hair, and this ſlit ſhould be very deep; then take a little tow and roll or twiſt it between your fingers to the length of the ſlit, dip it in ſpirit of turpentine and put it to the very bottom of the cavity; afterwards roll up two more parcels of tow, but larger than the former, dip them in turpentine made as hot as the horſe can bear it, and fill up the whole cleft and the foot, binding them on with

thin pieces of iron rather than wood; obſerve that you muſt not do this till after the horſe is ſhoed and the inſide of his foot has been well waſhed with brandy. This being done, put a ſmall iron pin or key between the two branches of the ſhoe, where there ſhould be indentions to receive the ends of it and make it keep in. Leave on this firſt dreſſing, if it be winter, three days, if ſummer only two, and proceed ſo every time you dreſs the horſe, and have ready a key a little longer in order to open the heels farther, which will be eaſily done, provided the horn be tender.

We have one thing more to obſerve, which is, that though you do not take off the dreſſing for three days, you muſt apply a good reſtrictive, as ſoon as the horſe is unfoled, and change it every day for three or four days running.

When you take off the rolls of tow to put on freſh, you muſt uſe the old ones to wrap about the heels and the hoof, eſpecially towards the crown; continuing this courſe till the ſole is ſound and beautiful. At the end of fifteen or twenty days, proceed to the other foot, for this accident is always common to both the fore, but never to the hind-feet.

*Another remedy for an incaſtellated horſe.*

The deſign of this is, for horſes which are not altogether incaſtellated; however, ſuch as are not firm

firm on their feet, muſt be prepared for the operation; for this purpoſe you ſhould ſoften their feet with the following ointment:

Take elder-bark, pitch, ſweet-oil, yellow-wax, mutton-ſuet, and turpentine, of each two ounces; melt all together, and ſtrain it through courſe linen; fill the inſide of the horſe's foot with this, and anoint the hoof all round; repeat it for ſome days, and let the ointment be very hot. When the feet are well ſuppled, you muſt pare the inſide of them as much as poſſible, and almoſt to the quick, then open the frog as far as you can between the heels, and quite to the hair; dreſs the wound with Venice-turpentine; and afterwards, put on the ſhoe, deſcribed in the preceding article, and uſe the ſame keys.

*A numbneſs or ſtunning of the hoof.*

It often happens that a horſe hurts himſelf againſt ſome ſtone or other hard thing, and numbs his foot ſo as to make him lame. This is the caſe we here ſpeak of; to know it, you muſt handle the feet, and when you find one of them hotter than the other, you may conclude that in that lies the pain which makes the horſe limp; have recourſe to the following remedies: firſt, cauſing the foot to be well pared, then a compoſition to put in the hollow of it, and a ſort of pultice to bind round the crown.

The compoſition for the inſide of the foot is made with leys of wine, putting into it the flower of linſeed, hogs-lard, honey, and turpentine, about the ſame quantity of each, and boiling all together till it is reduced to a pap, which apply very hot; this is a good preparation on almoſt every occaſion, and fortifies bad feet.

*A remedy to put round the foot of a horſe, and which may ſerve alſo for a hurt in the reins of a horſe.*

Take old hogs-lard, common honey, roſin, and common turpentine, of each four pounds; ſweet oil and leys of wine, of each one pint; pitch, and linſeeds powdered, of each one pound; reduce what is dry to a powder, and boil the whole together to a ſort of pap; which apply warm all round the hoof, dreſs your horſe once a day till his lameneſs is gone, which will not be long.

*How to make the hoof become ſoft and good.*

Take ſweet-oil, yellow-wax, mutton-ſuet, and turpentine, of each four ounces; melt the whole together, and when you take it off the fire, keep ſtirring till it is cold and of an unctuous conſiſtence. Uſe this ointment to the horſe's feet every day, which will keep them ſoft and moiſt, eſpecially towards the crown, and by this practice, what grows will be good and firm. You muſt not expect thoſe that are brittle and ſpongy to become good

all

all at once; but in course of time, by virtue of this ointment, you will find them so.

*Another ointment to make the feet good.*

Let your horse be shoed as near as you can possibly, when the moon is in the middle of her increase, and then anoint his feet with the following ointment:

Take fresh-butter, mastic, gum, galbanum, pitch, rosin, and gum-elemi, of each two ounces; soak them twenty-four hours in a quart of vinegar, and add yellow-wax, two ounces; sweet-oil, turpentine, mutton-suet, and honey, of each four ounces; ointment of marsh-mallows, three ounces; put all together in a pipkin, over a moderate fire, without flame, and boil it till all the vinegar is evaporated; then pour it into another vessel and stir it till it is almost cold. Use this as the preceding:

*For a horse that is tender-footed.*

Some horses seem to have very beautiful well-made feet, and yet are very tender in the sole; they cannot walk on stony or hard ground because every little matter hurts their feet, and lames them. The cause of this is often looked for in the wrong place; to know where it is, therefore, you need only clap the palm of your hand, upon the horse's sole, which will itself shew you by its

its extraordinary heat, where the pain lies; for this heat will be much greater in the fore-feet, where the diſorder is, than in the hind. Sometimes in walking over ſtony ground, a ſmall flint gets into the hollow, and is held by the branches of the ſhoe, ſo as to bruiſe the ſole. The following remedy will ſerve in both theſe caſes:

Take onions and pound them well; add hogs-dung, vinegar, common ſalt, and oil of olives, the ſame quantity of each as of onions; ſtew the whole together a full quarter of an hour, and let it juſt boil up; then apply it upon the ſole, as hot as the horſe can bear it. You may dreſs him in this manner every twenty-four hours, four or five days running, and this will harden the ſole and take away the lameneſs.

*A horſe that has ſoft feet.*

A horſe is liable by this means to become lame, when he is obliged to work upon any pavement, or ſtony ground; when this happens, you muſt begin to unſhoe him, and pare the inſide of his feet almoſt to the quick; when he is ſhoed again, apply the following remedy, which you muſt bind on with tow and ſplinters, and renew it every twenty-four hours:

Take two pounds of the oldeſt and fatteſt bacon, chop and pound it well, then melt it in a pipkin or ſtew-pan, and ſtrain it through a coarſe cloth;

cloth; as it comes through let it run into a pint of brandy, which you have ready for that purpoſe in another veſſel; beat the whole well together, and apply ſome of it to the horſe's feet three or four days running. This will bring them into good order, and harden the ſoles.

*A brittle hoof.*

There are ſo many infirmities that make a horſe lame, that few people take the pains to know what they all proceed from; we have one yet to mention, which is the brittle hoof. Though the foot may appear beautiful and well ſhaped, and the horn good and ſmooth, a horſe may be of little value on account of this defect; it is difficult to be known, at leaſt without ſeeing a horſe ſhoed; but then, the farrier is obliged to uſe very thin nails, or elſe the hoof will fly as he drives them; the ſhoes alſo, muſt here be very light, for if you put heavy ſhoes on ſuch a horſe, and work him in mud, or fat heavy land, or in roads that are a little frozen, he will be apt to leave his ſhoes behind him, and ſo much of the hoofs as held them. When dealers have ſuch a horſe, they keep him a long time in the ſtable, in order to let the horn grow afreſh, and then ſhoe him with light ſhoes, or ſhoes almoſt woren out, and nails that are very ſmall in the ſhank. This defect, great as it is, may, however, be remedied in ſome meaſure, if you only

only keep the horn well greaſed with foot-ointment, and do not run into the error of many coachmen, farriers, and grooms, in Holland eſpecially, who make uſe of train-oil, that of a whale, and chimney-ſoot, or the aſhes of burned ſtraw, to render the hoofs black and ſhining; if they were to do this to the hind-feet only, the evil would be but half as bad, becauſe this accident never happens but to the fore-feet; but if theſe people are obſtinately ſet upon having their horſes feet all black, let them mix their ſoot in the foot-ointment, which will be never the worſe, nor leſs nouriſhing to the horn. We confeſs that if they uſe it often, this ointment will come dearer than the train oil, becauſe the bruſh will ſuck up a great deal of it; and on the other ſide, if our delicate coachmen and grooms were obliged to rub the hoof with their hands, it would undoubtedly injure them much, though it would ſave the ointment, becauſe thoſe fine fingers of their's were not made to be daubed.

*An ointment for the diſeaſes of the feet.*

This ointment will keep the feet of horſes ſound, if conſtantly uſed, as alſo make thoſe that are brittle and bad, good and ſound:

Take yellow-wax, black-roſin, Burgundy-pitch, turpentine, honey, hogs-lard, mutton-ſuet, ſweet-oil, of each half a pound; boil the whole together in

in a large pot over a charcoal fire where there is no flame, and take care that nothing boils over of theſe combuſtible ingredients; the whole being well boiled, pour it into earthen pots in order to cool for keeping. No man that keeps horſes, ſhould be without this, becauſe a horſe that has bad feet, can be of little ſervice till you get them cured.

*Another ointment for the feet.*

Take an equal quantity of tar and mutton-ſuet, melt them together in an iron ladle, and it is fit for uſe. This is a well-contrived remedy for ſtopping up horſes' feet that are very hard and brittle, as well as to rub upon their outſides, whenever you find occaſion.

*Rats-tails on the legs.*

This defect is more common on the hind than on the fore legs, though the latter are not quite exempt from it. It is thus known; when you ſee from the hind part of the footlock, up along the nerves, a kind of line or channel, that ſeparates the hair to both ſides, this is a rat's-tail; in ſummer there appears a kind of ſmall dry ſcab along this channel, and in winter there iſſues out a ſtinking humidity like the water from the legs; this defect is not common to delicate horſes, who have ſcarce any hair on their legs, and who have been

nouriſhed in dry paſture and among mountains, but it happens to fat coach or dray-horſes, that have been brought up in ſtrong, humid, marſhy lands, and conſequently are fuller of humours than the others. You muſt uſe the ſame remedies here as to horſes that have the waters. A horſe may work notwithſtanding he has this diſorder, becauſe it ſeldom lames him, unleſs it be in winter, when he is obliged to work in mud, ice, or ſnow; it occaſions a ſtiffneſs in the legs, and makes them trot like foxes, that is to ſay, almoſt without bending their joints.

*Of the capelet, or paſſe campane.*

This is a ſort of tumour, which begins at the hough behind, and deſcends along the nerve; it is very hard to the touch, and conſiſts of a humour which is ſoft at firſt, but hardens with time, and forms itſelf into a callus; while it is yet ſoft, if you take care and underſtand it, the cure is eaſy, with only giving a quart of wine and as much urine mixed together, and having a quarter of an ounce of ſal ammoniac melted in them; beſides which, you may apply ſome of it with a ſponge upon the ſwelled part, and bind it on with a bullock's bladder, to keep it from evaporating, with a broad ligature; repeat this eight or ten ſubſequent days, and the capelet will diſappear; but if you wait till it is quite hardened, there is nothing

nothing but the actual cautery can cure it, which muſt be given in the following manner:

Make a line in the middle, drawing it from the point of the hough down the whole length, then make three more on each ſide, as you are directed to do round the footlook for windgalls; treat the horſe afterwards in the ſame manner as in the article for that diſtemper.

*Another remedy for the cape let.*

If the caſe be recent, you may take ſpirit of turpentine and wine-vinegar, an equal quantity of each, and beat them up together; rub in ſome of this very hard with your hand twice every day, and continue it till the horſe is well. For want of ſpirit of turpentine, you may make uſe of brandy and a bit of ſope, with which rub the part diſordered three times a day till it is well.

*Of the eſperon or ſpur.*

This diſorder comes juſt above the preceding, but ſeldom makes a horſe limp; it disfigures him and that is all; your ſprightly, gay, ſtartliſh horſes are moſt ſubject to it, becauſe it proceeds from their ſkittiſhneſs with their hind legs, when they ſtrike the hough againſt a bar, a pillar, a wall, or whatever is in their way, and by the violence of the blow, bruiſe the part and make it ſwell, ſo that it looks like a bladder full of wind. If this hurt

be recent, it is eaſy to cure with only eight or ten pails of cold ſpring-water, bathing the tumour well and often with a large ſponge; this will ſoon reduce it, and may be entirely depended upon, ſimple as it is, provided the hurt be freſh and there is no neglect in making the application. A more inveterate ſpur may be cured with the ſame remedies as the capelet, if you take away every thing he can hit himſelf againſt in his gambols.

If the diſorder has been of a year's ſtanding or more, you muſt open the ſwelling with your fire-iron, claſping the ſkin faſt in your hand, to keep the iron from touching the bone of the hough; having pierced it, a red water will iſſue forth; you muſt then dreſs the wounds with tents of tow dipped the firſt time in warm wine with ſugar melted in it; afterwards dreſs it every day with the tents in the ſame form, dipping them in tincture of Succotrine-aloes, and continue thus till he is well.

*Relaxed or extended nerves.*

It is not uncommon for a horſe to relax by a ſtrain, either when he is at work, or under any operation of the farrier, or at any other time, of the nerve which goes from the point of the hough, up the hind part of the thigh; this accident often makes him ſtop ſhort, being no more able to move his

his leg, nor to ſupport himſelf on it, than if the bone of his thigh was broken.

*A remedy.*

Take ſpirit of turpentine and wine-vinegar, the ſame quantity of each, and beat them up well together; dip in this two large ſponges, and apply them along the nerve; bind them on with a thick wrapper, a bullock's bladder, and a broad ſwathe over all; repeat this dreſſing eight or ten days following, and take ſpecial care that the horſe never lies down all that time, nor indeed for a fortnight or three weeks longer; for which purpoſe, you muſt tie him with four reins, two to the rack and two to the manger, ſo that he can either eat or drink without moving out of his place. The eight days being over, rub the part on the following days, to the number of ten or twelve, with this compoſition:

Take oil of bays, ointment of marſh mallows ointment of poplar-buds, ointment of roſes and honey, each a quarter of a pound; let the whole be well mixed together, and uſed once a day, which will completely fortify the nerve. At a month's end the hair will be grown again, and then you may work the horſe as before.

*Diſorders*

*Diſorders in the haunch.*

A horſe is very often lame in the haunch, but the difficulty is to know what that lameneſs proceeds from; almoſt every one treats a horſe that is lame here, as pricked or unhaunched, yet the cauſes of ſuch lameneſs are many and various.

Firſt, he may have received a very hard blow upon either ſide of the croup; when this is the caſe there is no great danger.

Secondly, he may have been ſtruck upon the corner of the haunch which is over the bone of the joint, and yet nothing be diſplaced. This is more to be feared than the other, but a horſe may be cured of it in a little time, with good remedies.

In coming out at a door and turning too ſhort, a horſe may ſtrike the corner of his haunch and lame himſelf.

He may alſo bruiſe the hip-joint, which is that which appears next to the flanks, of the ſame height as the ſhoulder; this part is very ſenſible, and a horſe may be lamed here for a long while, though nothing be put out.

Some farriers confound all theſe accidents with one another, and all hurts in the haunch are with them the ſame. They generally ignorantly ſay, your horſe is unhaunched or pricked, and have recourſe to remedies that can be of no effect.

We

We will treat of the diſlocation of the haunch, after we have gone through the other caſes.

When you have diſcovered the hurt to be from one of the above cauſes, make the following compoſition:

Take linſeeds, beat or bruiſed in a mortar, roſin, pitch, turpentine, ſweet oil, and honey, of each eight ounces; leys of wine a quart; boil the whole gently together a full quarter of an hour, and when you take it off the fire, ſtir it till it is of a proper warmth to be applied to the part afflicted. Renew the application twice a day, and every time clap over it a piece of ſoft paper, or a bladder, or a bit of moiſtened parchment, which will give it the better effect. The ſame compoſition is good for the reins, for relaxed nerves, and for tired legs. If you continue it for ten or twelve days, you will diſcover very manifeſt good effects; but the horſe muſt not lie down the whole time you uſe this remedy.

*A falſe ſtep.*

What we call a falſe ſtep, is a ſtrain that a horſe receives by ſome violent wrench, occaſioned by his foot ſlipping into a hole, or by travelling on uneven ground, or in froſty weather.

If the hurt is freſh, it will be the more eaſily cured. The beſt way is, immediately upon his receiving the ſtrain, or as ſoon as you can come

at

at any running water, to lead him in, and make him ſtand there a full hour, which will prevent any lameneſs enſuing. Repeat this bathing four or five times in twenty-four hours, leaving him as long in the water each time. This will entirely cure him without any other remedy. But if it be an old hurt, as all the ligaments of the joint muſt have ſuffered, the caſe may be a long time in hand, in ſpite of the beſt remedies.

There will appear to be very good reaſons for this, if we conſider that as the legs of a horſe carry a great burthen, they muſt be fatigued, and he cannot lie down nor riſe without much pain. It is not the ſame with a man who keeps his bed, or carries his arm in a ſling for a violent ſprain, and therefore as he gives the part no fatigue, it is ſoon well.

*Remedy for a falſe ſtep.*

Take tar, and rye-flour, with the ſame quantity of turpentine, and half as much pigs fat; mix the whole together, and ſtew them over the fire, to the conſiſtence of a very thick pap. When you take it off, add a gill glaſs of ſpirit of turpentine, and ſtir it well in. Apply this as hot as the horſe can bear it, round his footlock, with tow, a pig's-bladder, and a broad bandage, for any thing narrow would make the nerve above ſwell. Repeat this dreſſing every day, till you ſee it has its effect. The tow which was uſed firſt, may

ſerve

ſerve a long time, only putting on a little freſh pultice when you open it. If you do it night and morning, inſtead of once a day, the horſe will be the ſooner cured.

When you perceive that the horſe mends, you may leave off the above remedy, and only uſe, in its place, marſh-mallow-roots, boiled and beat to a pap. There is no occaſion to apply them warm. Towards the end of the cure, you muſt cleanſe the part with warm water and ſope, and afterwards take the horſe out, and give him an eaſy airing, without forcing him to any thing, for fear of renewing the ſtrain. You muſt ride him to prevent him from leaping, which he might do, if led by a ſervant. He muſt not lie down during the whole cure, nor ſtir out of his place before this.

*Of the comb, or crown ſcab.*

The crown-ſcab is occaſioned by humours that fall upon a horſe's feet, round the coronet, juſt above the hoof. It ſends out a thick moiſture, like muddy water, which prevents the hair of the crown from falling down equally upon the hoofs, and makes it divide all round, like the teeth of a comb. This diſeaſe never happens to horſes bred up in dry and hilly countries, but to thoſe only who have been uſed to low and moiſt meadow ground. It is very common to horſes who have

abundance of hair upon their legs. There is no great difficulty in curing it, but in this caſe you ſhould not work the horſe in a large town, among the dirt, rubbiſh, and filth, that may clog up the ſtreets, becauſe the diſorder may return again another winter, after it has been once cured, though the horſe has been fed upon dry provender, but his feet not having been kept very clean.

The remedy is only to cut off the hair with a pair of ſciſſars, as cloſe as you can, and then rub all round the crown, night and morning, with black ſope, and at the end of two days, to waſh it with warm wine. When the foot is dry, you muſt begin again with the black ſope, and repeat it five or ſix days running, waſhing the part every other day with hot wine. Thus you will ſee the hair become ſmooth, and the crown-ſcab diſappear.

*Another.*

Though it has been ſaid, that this diſeaſe happens to horſes that have much hair on their legs, we do not mean that all horſes who have much hair there are ſubject to it. It proceeds alſo from ſudden chills, and an ill management of horſes when they work in mud, and likewiſe when a horſe is put up in a ſtable without having his legs and even his whole body well rubbed down, for this

this will cauſe thoſe humidities to fall down upon the lower part of the legs, and the filth continuing there, produces ſmall bliſters, that break and throw out a moiſture, which, between whiles, take off the hair, and running down in channels, make the figure of the teeth of a comb, as before deſcribed. If the foregoing remedy does not ſucceed to your ſatisfaction (though it be very good provided the horſe be kept clean) make uſe of the following:

Take ſtrong mercurial blue ointment, half a pound; rub the parts affected with it ten or twelve days following, having firſt ſhaved off the hair.

*Watery ſores on the legs.*

This defect happens to horſes loaded with hair on their legs, and fed in ſuch marſhy countries as the preceding; to diſtinguiſh the diſeaſe, obſerve the lower part of the legs, and if you find them ſwelled, eſpecially thoſe behind, between the foot-lock and heel, and that there iſſues from them a ſtinking moiſture, conclude this to be the water in the legs which is often the fore-runner of the two ſubſequent diſeaſes, and therefore ſhould never be neglected; to ſtop the courſe of it, begin by taking ſome black hellebore-root, and ſteep it in wine-vinegar; then make an inciſion behind, in the upper part of each thigh, juſt below the but-

tock; you muſt a little looſen the ſkin of theſe inciſions, that there may be room to put in the hellebore, to about the ſize of a finger; then give a ſtitch at each cleft to keep it in, leave it there till it drops out of itſelf, in which time it will draw out abundance of matter, and by that means give a revulſion to the ill humours that may deſcend. If the ſwelling does not diminiſh, ſhave off the hair all round the leg, ſo far as it extends, and as the moiſture appears, in order to apply the following remedies;

*A remedy for watery legs.*

After having ſhaved off the hair behind the footlock, cut the latter acroſs the ſpur, and looſen the ſkin from the fleſh on both ſides of the cleft, that you may gently find a way to a thin ſkin full of water, in the ſhape of a little bladder, and about as large as the end of one's finger; take this away eaſily, for fear of hurting the nerves and ligaments that hold the joints of the footlock; then foment the wound with freſh urine, and wrap it with a bandage and tow dipped in ſpirit of turpentine, keeping it cloſe that no air may enter; you muſt leave on this firſt dreſſing twenty-four hours, and when you take it off, have another ready to clap on in a moment, without ſtaying to look at the wound, which you muſt treat in this manner, till it is quite cloſed up. This laſt operation is very good

good, and cuts off the communication of all ill humours that may fall upon the legs. But if you have no farrier that knows how to perform it delicately, have recourſe to the following remedies;

*A remedy for watery ſores.*

Take litharge, two pounds; verdegris, green-copperas, common alum, white-copperas, gall-nuts, of each one pound; reduce the whole to powder, and ſteep it twenty-four hours in a gallon of vinegar; then with a ſponge dipped in this, waſh lightly twice every day the parts which the water oozes from, continuing to do ſo till the horſe is well; the hair muſt be here cut off.

*Another.*

Take verdegris, gall-nuts, green-copperas, and white-copperas, all finely powdered, of each two ounces; roch-alum, one ounce; white-wine vinegar, three quarts; pound the drugs, and then boil the whole in a large earthen pot; uſe this every night and morning to foment the horſe's legs till they are well.

*Another.*

Take æthiops-mineral, four ounces; verdegris, roch-alum, gall-nuts, pomegranate-bark, all powdered, of each two ounces; hogs-lard, one pound;

pound; mix the powders with your lard cold in a mortar for an ointment, which apply to the ſcabs.

*Another.*

Take roch-alum and white-copperas, a pound of each; powder them and put them into two gallons of water, which boil to the conſumption of half; you may keep this water as long as you pleaſe, in order to uſe in the following manner:

Dip a ſmall ſponge in it, once every day, and draw it lightly over the parts that diſcharge the humour; if the grapes begin to run, this water alone is ſufficient to cure them; but in order to prevent their returning when winter comes on, you muſt purge the horſes that have been attacked with them, and keep their legs very clean, with a view to turn back the humours; for without very great care, you may have warts at laſt come in the ſhape of grapes, and then you will have much more trouble to cure your horſe than before; they are both indeed of the ſame kind, with this difference, that the grapes only grow to the ſkin, and are ſmaller and more numerous; whereas warts are large, for ſome of them, ſometimes, are larger than nuts, and are with great difficulty removed, eſpecially after they have been long growing.

*A remedy for warts.*

We believe it needleſs to repeat the rules for diſtinguiſhing of warts, our buſineſs, at preſent, is to know how to remove them; firſtrub them every day with lapis infernalis, and afterwards, apply the ſame remedies that are preſcribed for grapes; continue the uſe of the ſtone till they quite diſappear, but touch them with it very eaſily, eſpecially if they grow to the ligaments, which you may readily diſcover; for want of the lapis infernalis, apply ſome of the following ſtone, pulveriſed, and put the remedies over it.

*A ſtone to eat off warts, or proud-fleſh.*

Take green-copperas, wine-vinegar, and urine, of each one pound; put them all into a glazed earthen pipkin, and ſet them over a gentle charcoal fire, till the humidity is quite evaporated and the whole becomes dry; then augment the fire till what there remains becomes as hard as a ſtone; take off your pipkin red hot, and put it into a cellar, or ſome other cool place, a whole night; in that time, the ſtone will looſen itſelf from the pot, and you may uſe it in powder, as above directed.

*Fleſhy*

### *Fleſhy frogs.*

What we call *fleſhy frogs*, are never found but on the fore feet; they are very inconvenient, becauſe every horſe that has them, muſt have a large, and conſequently a very heavy foot; ſuch a horſe fatigues himſelf more than another, and cannot, for that reaſon, do ſo much work as one that is well.

The caſe is known by only taking up a horſe's feet and looking at them, to ſee if they ſpread very much, and if the frog grows as high as the ſhoe. It is this that hinders a horſe from working upon any pavement, or rough ground, becauſe the frog, by growing ſo high, comes to the ground or pavement, and is ſo bruiſed as to make the creature lame; it is uſual to ſhoe ſuch horſes with large froſt-nails, but that is both a troubleſome and expenſive method, becauſe they muſt be new-ſhoed as often as the nails wear down, or the lameneſs returns; thoſe who cannot diſtinguiſh fat-frogs from low-heels are often deceived, and have their horſes ſhoed as for the latter defect; they puzzle themſelves about opening the heels, and divide them from the frogs with their buttreſs, by which means they take away the ſtrength of that quarter, which the branches of the ſhoe ought to bear on, cauſe the heels to cloſe up, and make the horſe lame; whereas they ought not to ſeparate the

the frog, but rather to fortify and nouriſh the heels with good foot-ointment, bound on with liſt; this will make them grow, but not very ſuddenly, becauſe the horn of a horſe's foot is a very hard ſubſtance; it requires at leaſt five or ſix months to reſtore feet that are ſpoiled, and conſequently there muſt be full as much time for heels that are naturally weak to become ſtrong.

*Full or clogged-up feet.*

What we call a *full or clogged-up foot*, is a capital defect, becauſe very difficult to be cured; nothing can be done for it without great pains, and what we can do at moſt is ſo little, that it is hardworth while to take them; a horſe in this condition can do very little ſervice, not being proper, either for the ſaddle or for drawing upon the ſtones. He can be uſeful only at plough, and that too muſt be in very light ground.

The way of ſhoeing him is with vaulted ſhoes, that he may bear only on the edge of the horn; and to keep this good, you muſt rub it often with foot ointment, from the crown down to the bottom, otherwiſe the horn will break, after which, there can be no poſſibility of faſtening a ſhoe to it, and indeed the ſhoe is then worth more than the horſe.

*Circled feet.*

Circled feet are very eaſy to be known; they are, when you ſee little excreſcences round the hoof, which incloſe the foot, and appear like ſo many ſmall circles. Dealers who have ſuch horſes, never fail to raſp round their hoofs, in order to make them ſmooth; and, to conceal the raſping, when they are to ſhew them for ſale, they black the hoofs all over; for without that it may eaſily be perceived what has been done, and ſeeing the mark of the raſp, is a proof that any horſe is ſubject to this accident. As to the cauſes of it, in ſome it proceeds from the remains of an old diſtemper, from their having been foundered, and the diſeaſe cured without any care taken of the feet, whereupon the circulation of the blood not being regularly made, eſpecially round the crown, between the hair and the horn, the part loſes its nouriſhment, and contracts or enlarges itſelf in proportion as the horſe is worked.

If theſe circles were only on the ſurface, our jockies' method of raſping them down, would even then be good for nothing; but they form themſelves alſo within the feet as well as without, and conſequently preſs on the ſenſible part, and make a horſe limp with ever ſo little labour.

One may compare a horſe in this condition to a man that has corns on his feet, and yet is obliged to walk a long way in ſhoes that are too tight

and

and ſtubborn; a horſe therefore is worth a great deal leſs on this account, notwithſtanding that we may in time, by continuing the daily application of the foot-ointment, bring him a little to himſelf. But this muſt be a work of time indeed, becauſe his feet muſt be quite changed, before they can be good, which, with all the care you can take, they will hardly be in leſs than ten or twelve months. You may work him however in the mean while, obſerving always when you put him up, to cleanſe the inſide of his feet well, and fill them with cow-dung, fried with pigs-fat and a little vinegar. And even if he does not go out of the ſtable, never fail to do this twice or thrice every week, or indeed every night, till the circles of the feet are gone.

*Battered ſoles.*

A battered ſole is, when a horſe that has flat feet loſes a ſhoe, and travels ſome time without it, or when he gets a ſtone in his foot, which is kept in by the ſhoe, and walks upon it till it bruiſes the part. If this ſtone continues there long, and you are obliged to pull it out, you are certain what made your horſe lame. But when it drops out of itſelf, ſome ignorant perſons look for the cauſe of their horſe's lameneſs, when that cauſe no longer exiſts. The beſt way, therefore, is to get him inſtantly unſhoed, and have his feet

pared; after which, examine them well, by ſtriking gently with a farrier's hammer all round, to ſee if he has been any where pricked in ſhoeing. If you do not find any thing thus, take up the foot again, and preſs it all round gradually with pincers, obſerving if he winces, and catches away his foot. Even this may not be ſufficient to find the cauſe of his malady. You muſt next take the hammer, and ſtrike him on the ſole; and if he then ſhews any ſign of pain, you may know what the grievance proceeds from. In order to remedy it, you muſt apply ſome healing compoſition, or fill the foot night and morning with cow-dung, fried with hogs-lard and a little vinegar; or common tar and greaſe, an equal quantity of each, melted together. This, with reſt and time, will certainly cure it.

### *The bone-ſpavin.*

When the bone-ſpavin happens to a horſe in one leg only, it makes him lame; but when it ſeizes both, either behind or before, he does not limp at all. His joints, however, are not free, and conſequently he cannot be ſure-footed. The motion of the joint between the hoof and the footlock being impeded, it can be of no great ſervice; and when the diſorder is alike in both legs, and the horſe is not lame, many people are ignorant how that joint is formed, and what uſe it is of

of in walking. Purchaſers take ſuch horſes without knowing them, and are not convinced of their error till it is too late. You ſhould examine a horſe thoroughly before you buy him, and in particular, ſee if all the joints of his fore-legs move with equal freedom. Moſt horſes that have the bone-ſpavin, are very apt to ſtart when you go to take up their legs, and will hardly let you touch them with your hand. Examine them well, therefore, with your eye, and ſee if between the footlock and the crown, the leg deſcends even and ſmooth, for if you ſee any protuberance between the fleſh and the ſkin, that looks like a knot, or kernel, you have found the defect. If the tumour be yet ſoft, it will be the more eaſily cured; but in time it grows very hard and callous, and conſequently very obſtinate. A man that has cured twenty of theſe in his life-time, cannot fairly promiſe for the twenty-firſt, for the leg perhaps may be never the better, after all the good treatment in the world. But if you have the good fortune to take it in hand at firſt, before the ſwelling is grown hard, you muſt ſhave off the hair, and apply once a day ſome of the ſtrong ointment which you will find in the articles of blows on the nerves; continue this for about a fortnight, after which apply marſh-mallow-root, well boiled and pounded, and continue it alſo once a day for a fortnight or three weeks longer, faſtening it on with

with a bandage. You need not expect, however, that this method will cure an old bone-ſpavin, for that you muſt unſole your horſe, as the farriers know how, and the ſole being raiſed, bleed him in the foot, and then dreſs the ſole with turpentine, a little warm, and bind it faſt down with tow and ſplinters. The foot being dreſſed, give him the gooſe-foot fire, that is, draw a line upon the middle of the joint, from before the footlock to the fore-part of the crown, and then draw three others on each ſide, encircling the joint with them all round, as they deſcend. The fire ſhould be given more fiercely here than for wind-galls; but the firſt line ſhould not be ſo ſtrong as the others, becauſe it ſerves only for a guide, to make the others by. When you have given the fire, according to art, in the manner here ſet down, you have room to hope the diſorder will go away, and the horſe become pretty free in the joints; but you are not to expect as much ſervice from him as if he had never had any defect. He may be fit for ſhort excurſions, by way of pleaſure, but not for any long journey.

*Spavins or bloood-ſpavins.*

Spavins may come upon all ſorts of horſes, but ſome are more ſubject to them than others, according to their natures and habits; as there are three

three ſorts of ſpavins, we ſhall ſhew what kind of horſes are moſt liable to each particular ſpecies.

Dry ſpavins happen moſt frequently upon ſlender delicate horſes, ſuch as thoſe of Spain, Italy, Portugal, Barbary, and Arabia, or upon thoſe that are uſed to run in dry mountainous grounds; they may come alſo by deſcent; for if a ſtone-horſe has the ſpavin, out of twenty mares he ſhall cover, nineteen will have ſpavin foals; one ought to be very cautious, therefore, what horſe we make uſe of to breed from.

Though the dry-ſpavin be a capital effect, yet when a horſe has it equally on both ſides, and is put to the manage, provided he falls into the hands of a good maſter, who has patience to put him well on the haunches, this horſe will be more ſprightly than any other, and more agreeable to the ſight, as both his hams will beat exactly alike; but whatever good air he may have, it is impoſſible he ſhould be fit for the field, and that for many reaſons:

Firſt, ſuch a horſe never goes ſwift, and yet gallops much harder than any others; ſo that an ancient man, or one of a weak conſtitution, cannot long bear the fatigue he muſt give him in his loins; even in pacing or trotting, he lifts up his hind leg ſo high and brings them down ſo haſtily, and then catches them up again, as if he trod on thorns.

thorns. When a horſe has the ſpavin but on one leg, it is a very diſagreeable thing; you cannot take too much care therefore, as we ſaid before, of the houghs of delicate horſes, and when a ſwelling, ever ſo ſmall, appears upon the flat of the lower part of the hough withinſide, though the horſe may not limp, you ought to be apprehenſive that in time, and with a little labour, the ſpavin will increaſe on him.

The ſecond kind is called the *fat-ſpavin*, which comes almoſt in the ſame place as the other, but is larger, and is moſt incident to horſes that have been bred in fat marſhy lands; this kind ſooner or later lames a horſe, if regard be not had to him at the beginning; when it happens to two oppoſite legs, the horſe does not limp any more than in the former, but then he is good for little, and the effects of this ſpavin are different from thoſe of the other; for whereas in that, the horſe lifts his feet very high, and bends his houghs with violence; in this, on the contrary, he bends his houghs with pain, and conſequently is very unfit for the manage, as well as for the field.

If a horſe has this ſpavin but in one leg, and works ever ſo little, he will certainly limp, a nd thoſe who are unacquainted with ſpavins, look for the cauſe of it in his feet or haunches.

The

The third kind is called the *ox-ſpavin*, and is the worſt of all the three. It will admit however of a cure as well as the others.

*A remedy for ſpavins.*

Take five or ſix bits of houſe-tile, rub them round to about the ſize of a crown-piece, and make them red-hot, then having thrown the horſe, and rubbed the ſpavin well with a ſtick, made on purpoſe, or the handle of a hammer, take the tile-ſhreds out of the fire, with pincers, put them in a linen cloth that has been dipped in vinegar, and apply them to the part, leaving them there for ſome time; when they are a little cool, heat them again, and put them in the ſame cloth as before, and thus apply them ſucceſſively till the hair comes off with ever ſo little pulling, as if the part had been ſcalded; all this being done, let the horſe alone till the eſchar falls off the burnt place; then rub it with a pomatum made of hogs-lard and honey, till the hair comes again.

*Another.*

Though the preceding remedy has very often ſucceeded, this which follows is as much to be depended on; it is a ſtrong unguent, which is fit for all ſorts of hard ſwellings and calloſities that we want to get rid of:

*How to make the ſtrong ointment.*

Take euphorbium, corroſive ſublimate, black-hellebore, Spaniſh-flies, and crude-mercury, of each one ounce; flowers of ſulphur, two ounces; and oil of bays, ſix ounces. The drugs being all pulverized, kill the mercury in the flowers of ſulphur till you can ſee none of it; then mix the whole in the oil of bays, and make an ointment, with which anoint the ſpavin, or any other hard protuberance that you have a mind to diſſipate. You may ſave the trouble of mixing the mercury and ſulphur, by buying three ounces of æthiops-mineral. Uſe it once a day, the hair being firſt ſhaved off, for three days ſucceſſively; in that time an eſchar will fall off, and then you may dreſs the part with the ſame pomatum as is preſcribed in the preceding article.

*Another remedy for ſpavins.*

We could inſert many remedies for ſpavins, which would be ſucceſsful; but the beſt way of all is, to give the fire, when you can get a farrier that underſtands his buſineſs. In order to this, he muſt throw the horſe, and then rub the tumour with his ſtick or hammer-handle; then let him draw a line with the hot iron or fire-knife as before deſcribed; he muſt take his ſtroke downwards, through the middle of the ſpavin, and

then

then make three more lines on each ſide; but the operator ſhould have a light hand, and not cut quite through the ſkin; though he draws the knife ſeveral times over each line, he muſt never let the knife paſs upward againſt the hair, but always downward; after the ſeven lines, make four holes with your fire-iron, and put in each a pellet of black pitch, which you muſt melt with your iron.

After having given the fire, put writing-ink upon all the lines, and continue this application for ten ſucceſſive days; afterwards make uſe of the ointment for burns, that has been already preſcribed, and continue it till the ſkin is quite united.

Every horſe that has had the fire given him for ſpavins, ſwellings in the houghs, or windgalls, ought to be three or four months without work, and, if poſſible to avoid it, never perform this operation in ſummer, eſpecially when the flies are plenty, neither muſt you do it at the very time that the horſe limps, becauſe then he will never be cured. Let him reſt a fortnight or three weeks. The beſt way is to give the fire as ſoon as you perceive the ſpavin, without waiting till the horſe is lame.

Thoſe who are no judges of ſpavins often deceive themſelves, for as ſoon as the horſe has reſted a little, his lameneſs is over, which was owing

only to his work. There is yet another ſort of ſpavin below the hough and on the outſide, whereas the true ſpavin comes within; the ſame remedies are equally good for the jardon, which is a callous tumour near the ſame part.

*Varices.*

Theſe are ſwellings that come withinſide the hough, very near the ſeat of the ſalanders, where there paſſes a large vein which deſcends from the flat of the thigh to the bottom of the leg. Varices proceed from the violent extenſion of this vein, which forms a ſort of knot about as big as a filbert, and which, by degrees, grows as large as a tennis-ball; it moves when you touch it, and ſeems not to be fixed, ſo that one may take it for a ball between the fleſh and the ſkin.

To cure this, you muſt cut the vein above and below the hough; preparatory to which, you muſt make a ligature at the top and bottom, to keep back the blood; then make the inciſion between the ligatures, and afterwards diſengage the tumour from the fleſh. If a farrier dares not undertake this operation, though very eaſy and without danger, let him take a hot iron, pointed at the end, and pierce the middle of the ſwelling, taking care not to touch any part of the joint of the hough. At the bottom of the oriſice, let him put ſome little pieces of corroſive ſublimate, and

fill

fill it up with ſulphur or pitch; then with the point of the burning-iron, let him melt theſe ingredients, that the ſublimate may produce its effect, and corrode this ſuperfluous fleſh, which will conſequently die away; you may then dreſs it like any common wound.

*A veſſignon.*

There are two ſorts of theſe, the firſt is called a *ſimple veſſignon*, the ſecond a *windy veſſignon*, which is the moſt dangerous; it is a ſmall ſkin which is found in the middle of the flat of the hough, and which being now ſwelled, forms a bag of bloody ſanies, that in time make a horſe lame; all horſes have this ſkin, but they are not all ſubject to have it filled in this manner; the ſooner you take the cure of a veſſignon in hand the better.

The ſimple veſſignon appears without the ham, and the other within; if you ſqueeze it with the hand on one ſide it rebounds to the other; this diſorder, when recent, is eaſy to cure; but if you let it get ever ſo little head it becomes a difficult caſe.

In ſome horſes it is the effect of too much fatigue, in others of a violent ſtrain; the latter ſort, how large ſoever it may be, is moſt eaſy to cure; as ſoon as you perceive it, take about a quart of wine vinegar, and the ſame quantity of urine, mix them together, and diſſolve in them a quartern of

ſal

ſal ammoniac with a ſponge dipped in this compoſition waſh both ſides of the hough ſeven or eight times a day, and continue to do ſo for about a fortnight, in which time the ſwelling uſually goes away; that this remedy may be the more efficacious, it is proper to have two ſponges, and dip them in the ſame compoſition, applying one on each ſide, and putting over them a pig's or other bladder, with a good compreſs of linen cloth all round the hough, ſewed on cloſe, that nothing may come out; bind down the whole with liſt, but not too tight, for farriers often make their bandages ſo tight as to fail in a very inveterate caſe; but the beginning ſwell the nerves, and lame the horſe, and then they lay the blame of their ill ſucceſs on the medicines, without reflecting that they themſelves are the cauſe of it; if the remedy does not ſucceed, it is a ſign the caſe is of longer ſtanding than was imagined, and when that is the caſe uſe the following:

Take about two quarts of ſpirit of wine, in which diſſolve half a pound of camphor, and uſe it in the ſame manner as the former, and about the ſame time; if neither of theſe has any effect, which would be ſomething extraordinary, you muſt abſolutely give the fire on both ſides the hough, in the ſame manner as before deſcribed; but we adviſe an inciſion to be made with a ſharp inſtrument; after letting out the ſanies, draw off the remainder by pulticing it, as directed for the ſtrangles.

If

If a man expects to succeed in this, and to get reputation by what he does, he must never give the fire, either for the veſſignon, the ſpavin, the curve, or the windgall, at any time but about autumn, when the flies diſappear, and let the horſe be kept all the winter in the ſtable, without going ever abroad; even in the next ſpring you muſt take him out only in the morning early, to walk him through the dewy graſs, or green corn; having done this for ſome months, you may be aſſured that no accident will ever happen in the place where the fire was given.

Solleyſell ſays, "I remember to have ſeen my "deceaſed father perform this operation, by way "of precaution, to horſes for Lewis XIV's own "riding, and having practiſed it a long while my-"ſelf with ſucceſs, without an accident, even to "horſes whoſe legs ſeemed quite ruined, and they "have done nine or ten years ſervice afterwards. "For a mare or gelding, inſtead of keeping them "in the ſtable during the ſpring, the ſhorteſt way "is to put them to graſs; but a ſtone-horſe, if he "be not kept in the ſtable, muſt be in a cloſe by "himſelf, and walked in the morning, as before "directed. It is trifling to object to the great ex-"pence of keeping him ſo long; for if the crea-"ture ſhould become uſeful afterwards, that ex-"pence will not be regretted. The grand point "is to have the fire well given; I have never

"known

" known ſix perſons able to do it to perfection,
" though every country farrier thinks himſelf ſo.
" A farrier, I inſiſt on it, cannot have a light hand,
" and conſequently cannot uſe his tools with de-
" licacy; if he makes his knives too hot, he cuts
" the ſkin quite through; if not hot enough, he
" tears it; he muſt have ſeven or eight of them to
" change as they cool, and not heat them in a
" forge but in a charcoal fire; it ſignifies nothing
" to tie a horſe for this operation, you muſt abſo-
" lutely throw him down, as if you were going to
" geld him; after having given the fire, there muſt
" be ink put on every line for nine ſucceſſive days,
" in which time the eſchar will fall off; you muſt
" mollify the wound with ointment of marſh-mal-
" lows, or ointment of roſes, every day, till the
" ſkin re-unites; this may take up five or ſix
" weeks.

" The method of giving the fire, comes from
" the Arabians, who do it in almoſt all caſes; an
" hundred years ago it was quite unknown to us;
" they give it with golden knives, and formerly in
" France it was done with ſilver; I have uſed
" theſe myſelf, but lately, experience has con-
" vinced me, that ſteel knives are as good."

*The curb.*

This accident may happen in different manners, as from the veſſignon, of which we have treated

treated; a horſe often receives a ſtrain in working, or by ſlipping his foot in a hole, or in marſhy ground, out of which he pulls it with pain, and by that means wrenches his hough, without diſlocating any thing; yet the creature may be lamed without ſpeedy care; the ligaments of the hough being ſtretched, cauſe a great inflammation within, the hough ſwells from the middle (the ſeat of the veſſignon) to the bottom, where ſpavins and varices appear, and if not ſpeedily remedied become incureable, at leaſt without giving the fire, which is the only remedy, and that too often fails in very inveterate caſes; but at the beginning you need only uſe the ſame remedies that are proper for veſſignons, which having in part diſſipated the tumour, make it more eaſy to bar the vein both above and below the hough.

In order to bar the vein, you muſt throw the horſe; then look for the vein that proceeds from the thigh along the leg, and the joint of the hough withinſide; make an inciſion in it with a biſtory, or a pen-knife, but firſt with a light hand open the ſkin, and with a wild-goat's horn, or ſome other like thing, diſengage it from the ſkin and the fleſh, between which it runs; when you have got the horn under it, take a piece of waxed ſilk, or fine coblers-end, and bind the vein tight that it may not bleed too much; afterwards make another opening, above the hough, and do the ſame as be-

low; then cut the vein in two between theſe ligatures, and with a bit of cleft ſtick, about four inches long, take faſt hold of the end of it, and by turning the ſtick gradually, you will pull it out; ſuppoſing it to be a young horſe, there is no great danger if the vein breaks, becauſe of the ligatures above and below. It is needleſs to uſe any other remedy in dreſſing the wounds than ſalt-butter applied night and morning; let there be at leaſt an ounce of ſalt, powdered very fine, to a quarter of a pound of butter, and this will do more good than all the ointments you can get.

If by chance an end of the vein remains, or any impurity enters the wound, that may cauſe an inflammation, you muſt uſe ointment of marſhmallows, or a bath made of the roots of that herb, twice every day; for want of both, leys of wine and hogs-lard may ſerve the turn; put about half a pound of lard to two quarts of the leys, and boil them well together, ſtirring afterwards till it is cold; with this rub the ſwelling twice every day; if the curb be new it will certainly be cured.

Moſt farriers perform this operation for the ſpavin, but experience ſhows their ignorance in ſo doing, becauſe the ſpavin has nothing to do with this vein. It may be uſeful, however, for varices. There are others who perform the ſame operation for watery ſores or humours, which fall down the legs; many have fallen into this error, which is

now

now abandoned, ſince a more perfect knowledge of anotomy has been acquired of the ſeveral parts of a horſe.

It is true that in barring a vein for the waters, ſome open it before it is bound, and draw out a great deal of blood; after that they tie it above and below the orifice, and cut it below the two ligatures; this will relieve the horſe for ſome time, but as the arteries carry the blood down, and it cannot aſcend again as uſual, it produces a greater abundance of humours than before; for this reaſon we by no means approve of their manner of operation.

## GENERAL REMEDIES.

AFTER having taught the knowledge of many diſeaſes and accidents, it is proper we ſhould inſert ſome neceſſary and general remedies, according to the nature of each diſorder, and the convenience of thoſe who have the care of a great number of horſes. For example, a horſe that eats and drinks well, and yet does not thrive, or one who by any means is hindered from eating and drinking as uſual, ſhould have the following remedy given him:

*A purge.*

Every one ought to know that the moſt gentle purge is ſometimes dangerous, and kills a horſe if he be not prepared for taking it ſome days before;

many ignorant perſons, when they ſee a horſe's dung in ſmall balls, black and dry, and ſeeming even to be mixed with blood, are of opinion that he is burnt up within, and therefore ought to be purged; becauſe they have purged two or three ſuch without preparation, and by chance ſucceeded, they imagine they muſt ſtill go on in the ſame track, and when there happens any accident to a horſe, or they kill him by their medicines, they inſiſt on the juſtneſs of what they have done, and attribute the misfortune to ſome other cauſe.

When a horſe is heated, and the balls of his dung are cloſe and hard, you muſt debar him of oats, and only give him, for two or three days running, bran and warm water; if he can bear honey, you may put a little of that with the maſh. The evening before you purge him, adminiſter to him a laxative clyſter, for which you will find many recipes in this work; the next morning, after he has faſted five or ſix hours, give him the following pills, and let him faſt as long after he has taken them; you may repeat all this again in two or three days, for it will never do any harm.

*Purging pills.*

Take hepatic-aloes in powder, manna, and honey, of each half an ounce; ſal polychreſt powdered, an ounce; if the horſe be ſtrong, add half

half an ounce more of manna; mix the whole together, and make it up into pills of the ſize of a cheſtnut, which roll in liquorice powder, and let him ſwallow them one after another; give him a ſmall glaſs of wine after each, and when he has taken them all, leave him to himſelf; if you purge him for a giddineſs in the head, or defluxion in the eyes, add half an ounce or an ounce of powdered agaric, in proportion to the horſe's ſtrength. The next day, at the ſame hour that you gave him the pills, if they do not yet work, take him out of the ſtable, and walk or trot him till the medicine begins to take effect; then put him up again and cover him warm; you muſt offer him nothing but warm-water with bran and honey, if he will take it; let him have a good maſh of this five or ſix hours after the purge begins to operate.

*Another way of purging a horſe.*

As all purges are not alike, you muſt know the diſtemper of a horſe before you purge him; there are ſome purges to cleanſe the inteſtines, others for pains in the head, and others to purify the maſs of blood, whether in the farcy, the mange, the reds, or any other foulneſs. Having had the precaution to prepare your horſe as before directed, and even bled him, if there appear to be need of it, a day or two before let him take the following:

Take

Take ſix ounces of æthiops-mineral (which you may make yourſelf with two ounces of quickſilver and four ounces of flowers of ſulphur, rubbing them in a mortar till the quickſilver is quite killed) half an ounce of ſal-prunellæ in powder, and a quartern of freſh butter; make this into eight pills, roll them in liquorice-powder and give them as the preceding. This purge is very good to cleanſe away all corruption, and kill the worms in the body of a horſe. But if his lungs are ever ſo little damaged, it will haſten his death, which is no great matter, becauſe he is not in a condition to do any more ſervice, and ſo the ſooner he goes the better. It is quite otherwiſe with mankind, who may be uſeful on earth after they are touched with a conſumption, as well for the management of their families as for civil ſociety.

*How to make liver of antimony.*

Take four pounds of common ſalt petre, and five pounds of antimony, beat them ſeparately to a coarſe powder; then mix them, and put them both in a large crucible, iron mortar, or pot; a copper or braſs veſſel is not fit for the purpoſe; ſet it on fire with a piece of charcoal, and get out of the way as ſoon as you can, for the wind and ſmoke may take away a man's ſenſes and ſuffocate him; you muſt let this cool four

or

or five hours in the open air, and then turn up the matter on a linen cloth, to receive all that falls out of itſelf; the liver of antimony will remain at bottom and the droſs at the top; on the ſide where you ſee it on fire, you muſt divide the one from the other, which is very eaſy, and that being done, the antimony will appear brown, almoſt of the colour of bullock's liver, and ſhining; pound it, paſs it through a ſieve, and keep it for uſe, according to the preſcriptions in ſeveral places of this book. The doſe of it ſingly is an ounce morning and evening, mixed with the horſe's oats or bran, and let theſe be a little wet that the antimony may ſtick to them. The doſe may ſerve in clyſters in the room of ſal-prunellæ; you may make alſo an emetic wine, to be given in the draughts where ſuch wine is mentioned as an ingredient. If you get four pounds, or four pounds and a half of liver of antimony from the whole, you are very well off.

*How to make the crocus metallorum.*

Crocus metallorum is made in the ſame manner as liver of antimony, the only difference is, that in the crocus the two ingredients (ſalt petre and antimony) are in equal quantities; it is proper for the ſame purpoſe, but the liver of antimony is the moſt ſalutary. The doſe of the crocus is half an ounce morning and evening, given as before.

*A clyſter*

*A clyſter for a looſeneſs.*

Take a gallon of emetic wine, and boil in it twenty or thirty acorns dried and powdered; when they are well boiled, let this compoſition ſtand till it is of a proper warmth to be adminiſtered; then add a quart of ſweet oil to mollify the bowels; one clyſter of this will not be ſufficient, you muſt repeat it twice a day for two or three days running; you may alſo make a draught with a bottle of emetic wine, and a dozen of acorns in powder; two days after let him take an ounce of monk's rhubarb, otherwiſe called *raponti*, which will be as effectual as the true Eaſtern rhubarb.

*Another for a horſe that has taken a purge which has not worked.*

Take leaves of marſh-mallows and common mallows, pellitory of the wall, or garden night-ſhade, or for want of both, lettuce or ſuccory, or ſome of the caſſia decoction ſold by the apothecaries; you may boil any of theſe herbs with his bran, or mix the decoction with his bran and water, and having ſtrained the whole, add two ounces of double catholicon, a quartern of ſweet oil, and an ounce of ſal-prunellæ. If this firſt clyſter does not move the purge, repeat it five or ſix hours after, adding two ounces more of catholicon.

*Another*

*Another refreſhing clyſter.*

Take leaves of common mallows, marſh-mallows, pellitory of the wall, violets, lettuce, the herb mercury, of each two handfuls; aniſeeds and fennel-ſeeds bruiſed, of each two ounces; boil the whole together in water, and then ſtrain and give it the horſe. After he has diſcharged it, take him out, and trot him till he begins to ſweat, and then put him up in the ſtable, and cover him cloſe, to prevent his catching cold. His ſweat being over, if you are under the neceſſity of it, you may ride him ten or twelve miles the ſame day, but ſtop him a little between whiles, and at every place give him a mouthful of hay. If he eats it, you may conclude him out of danger. This clyſter is good for the gripes, if you give a quart of it at a time, in the form of a draught.

*Another.*

If it be in the ſummer, you may make the following:

Take leaves of lettuce, purſlain, and ſuccory (or for want of that dandelion) groundſel, garden night-ſhade, bete, mallows, and marſh-mallows, of each an equal quantity; boil them well, and ſtrain the decoction, and let each clyſter conſiſt of a gallon. You muſt diſſolve in it two ounces of ſal polychreſt, an ounce of ſal prunellæ, half a pound of honey, and add half a pound of ſweet oil.

The whole being well mixed, if you have not a ſyringe large enough, make uſe of a bullock's bladder, with a joint of reed, or elder with the pith out, of about a foot long. Fill the bladder with a funnel, but before you inject the clyſter, run your hand up the horſe's fundament, and empty his great gut, taking care not to ſcratch him with your nails, which might prove mortal. If you cannot get the above-mentioned herbs, make a decoction of barley or rye flour, and add to it the other ingredients.

*How to make the cordial and univerſal powder.*

This powder may be kept as long as you pleaſe, provided you put it in a glaſs veſſel, or a bladder, and let no moiſture come near it. Every military farrier, who has the charge of a number of horſes, ought to have it always by him, becauſe it is good for almoſt all diſtempers. It is for this reaſon we call it the univerſal powder.

*Preſcription.*

Take bay berries, juniper berries ripe, the ſeeds of fennel, aniſe, fenugreek, ſkirret, angelica root, gentian root, orris root, ſaſſafras wood, guaiacum wood, olibanum, agaric, monk's rhubarb, dried Seville orange-peel, leſſer centaury, leaves and flowers of wormwood, galangals, long birthwort-root, and round birthwort-root, leaves of ſage, and leaves of rue, dried in the ſhade, ground-ivy, and

and wild tanſey, of each a quarter of a pound; reduce them all to a powder ſeparate, and then add flowers of ſulphur and liquorice powder, of each half a pound; mix the whole together and paſs it through the ſieve; you may be certain, if the mixture be well made, that few remedies are equal to this powder; the doſe for each time is, from three to four ounces, in water or beer, according to the ſtrength of the horſe, adding to every doſe half an ounce of ſal prunellæ. This powder may be given at all times, either in the morning or in the afternoon; and if you are obliged to continue a journey, you need apprehend no bad conſequences from it, becauſe it tends to fortify the horſe.

*Another remedy to fortify a horſe that is ready to caſt, or whoſe appetite is palled.*

Take two or three ounces of Venice-treacle, an ounce of aſſa-fœtida, half an ounce of ſal prunellæ in powder; dilute the whole in a quart of wine, if it be for a fat horſe; if for a lean one, in a quart of good old beer. We have taken notice more than once, that a horſe ſhould be kept ſome hours entirely faſting both before and after taking any remedy; if you give this in the morning on a journey, and the horſe is hungry in the afternoon, you may venture to ride him ſome miles farther in caſe of neceſſity, becauſe the remedy

gives him no trouble. If you perceive no change in him at three or four hours end, repeat the doſe; for a horſe, on account of his prone poſture, is very difficult to purge; he is alſo hard to vomit, becauſe of the diſtance between his throat and his ſtomach; but then a vomit does not ſtrain but only ſharpens his appetite. This remedy is good when you merely ſuſpect any diſorder, and you never run any hazard in giving it.

*How to dye the hair of a horſe.*

When you have a white horſe or a horſe with white ſpots, and you are willing to conceal them for ſome time, take a pound of lime, a pound of gold litharge, a quartern of Caſtile-ſope cut ſmall; put the whole in a large pot, and pour in rain-water, by little and little, till the lime heats and diſſolves; then add more water and keep ſtirring it with a wooden ladle; when it comes to the conſiſtence of a clear pap, apply it with art upon the hair, in the places you want to blacken; cover it with paper or a linen rag, and leave the horſe tied up for ſome hours till it becomes dry; then waſh the part with water and ſope, and the more you waſh it the blacker it will appear. This may be done in any part where the hair grows, except the noſe, where the hair is very thin. You muſt take care however,

however, that the compoſition does not come to the ſkin, for it would certainly fetch it off.

*To paint the eye-brows of an old horſe.*

Take two ounces of aqua-fortis, diſſolve in it half an ounce of leaf-ſilver, and add an ounce of roſe-water; lay on this compoſition delicately with a pencil, on the eye-brows, and take great care that none of it gets into the eyes. If they are not ſtained the firſt time, you muſt repeat it as often as it dries, till it has the effect. If the horſe be bay, you muſt put into the compoſition an ounce of umber; if ſorrel, an ounce of litharge of gold.

*To make hair grow again that is fallen off, whether through the itch, or a wound in what part ſoever it be.*

Take ointment of poplar-buds and virgin-honey, an equal quantity of each; mix them well together, and rub with this twice every day the places that are bare; continue this for fifteen or twenty days, in which time the hair will grow again, as thick and ſmooth as if it had never fallen off.

*Another way.*

Take the roots of flat ſedge, which grows upon the borders of ſtanding waters, and having cleanſed them

them well, boil them in water to a pappy conſiſtence, and then add as much virgin-honey as you can conveniently mix with it. Put ſome of this compoſition freſh every day upon the bald places, and if you continue to do thus for fifteen or twenty days, you will ſee the hair return. We remember having uſed this preparation upon a young woman who had ſcarce any eye-brows. We had them ſhaved cloſe twice a week, and rubbed the places well, and at the end of ſix weeks, ſhe was hardly to be known, ſo large and beautiful were her eye-brows grown.

*How to make what we call a ſtar come on the forehead of a horſe.*

Take three leaden pencils, about the ſize of a gooſe-quill, and three or four inches long; then take a pointed iron inſtrument, of the ſhape of a ſhoe-maker's awl, and ſomewhat larger than the pencils. Run your inſtrument under the middle of the horſe's forehead, between the fleſh and the ſkin, bringing the point out at about five inches diſtance. Put one of the pencils into this hole, leaving both ends out. Make two more ſuch holes, and croſs the firſt in ſuch a manner as to form a ſtar, with ſix rays, and introduce the other two pencils as the firſt. After this, take a piece of woollen yarn, of the thickneſs of one of the pencils, and carry it under the ends of the pencils, turning

turning it round each, and ſo continuing till you have quite clogged up the ſaid ends, and made a large circle of yarn. Faſten it with a knot or two, and turn back all the ſix points of lead, ſo as to keep it tight on. Leave the whole in this maner five days, and then take up the yarn, and pull out the pencils, and without any more trouble, a ſort of impoſtume will form under the ſkin, that will make the hair fall off. There will then come a kind of cruſt, which will drop off of itſelf; after which, you muſt greaſe the part with a little mixture of honey and lard, in equal quantities. All the hair which grows after this, will be white and ſmooth.

There are many other recipes to make the hair white, but we ought always to imitate nature, the moſt nearly which, is done in the manner we have ſet down.

*How to fill up the hollow places over the horſe's eyes.*

Take clean barley and vetches bruiſed, in equal quantities, and boil them in roſe-water to a pappy conſiſtency; with this fill the cavities every day (that come over a horſe's eyes) and tie it on with a bandage made on purpoſe. Continue the uſe of this for three weeks or a month, and the cavities will fill up as if they had never been.

*Remedies*

*Remedies for figs in a horſe's feet.*

Pare the foot well where you diſcover a fig, that with your biſtory you may the more eaſily cut the ſole round the place where the complaint is, till you come to the raw fleſh, which is going to the root of the diſorder. If you regard only the top of the fig, your cure will be imperfect, for the fig will ſpread and extend, and though it appears ſmall on the outſide, it will reach all over the ſole. We do not think that it grows to the tendon, or the inner foot. Having thus diſcovered it all, take two pounds of honey, a pint of aqua vitæ, ſix ounces of verdegris, in fine powder, and ſifted through ſilk; ſix ounces of white copperas, pounded fine; four ounces of litharge, and two drachms of ſublimate, pounded in the ſame manner, and well ſifted; mix the whole with honey in a clean earthen pot, and let it ſtand over a gentle fire, ſtirring it often till it is ſufficiently thick. The ointment being made, ſpread it upon pledgets, which apply to the fig.

If in ſearching for the roots, you make the blood come, which ſhould be avoided as much as poſſible, put for the firſt dreſſing, a reſtringent made with turpentine and chimney-ſoot; apply this warm all over the fig; cover it with tow, and bind and ſplinter it down, to ſtop the blood.

Thus

Thus, in two days' time, when you take off the dreſſing, you will find all in good order; afterwards put on a dreſſing of the ointment above deſcribed, cold, with pledgets of tow, well banded and ſplintered on; let the whole dreſſing be ſo ordered with hard rolls of tow, that the tents you clap on the ſides, may preſs in the fig, and prevent its enlarging. Leave not the leaſt corner of the frog that touches the fig, without rolls of tow, that the whole may be kept under, and nothing grow beyond bounds.

Obſerve that the tow you make uſe of be very dry, and the pledgets and tents be made up hard before you ſpread the ointment on them. Take care alſo, that your horſe be in a good ſtable, or ſome other dry place, becauſe moiſture is ſo hurtful in this diſeaſe, that it may hinder a cure. Having taken off the ſecond dreſſing, which ſhould continue forty-eight hours, cleanſe the part well with dry tow, and examine if there be no fibres or roots remaining; then waſh your fig with what the goldſmiths call ſecond water, putting over it the ointment we have here preſcribed. Bind and ſplinter the place well as before, upon clean dry tow, keeping in the ſides with the rolls and pledgets, that it may not enlarge. A great part of the cure of this diſorder depends upon the good or bad application of the dreſſing.

When you change the dreſſings, take off gently with your ſpatula the ſmall eſchars, or rather ſkins, that the ointment has occaſioned, obſerving to fetch blood as little as poſſible. If, after the ſecond application of the ointment, the fig is not checked, but breaks out again, mix with one half of your compoſition, three ounces of good aqua-fortis, putting them cold together, and letting them ferment. Afterwards uſe this ointment as you did the former, and it will certainly ſtop the progreſs of the fig, if you take care to renew and bind on the dreſſing well every twelve hours. When upon taking off your dreſſing, you perceive the fig ſufficiently deadened, return again to your former ointment, without aqua-fortis, applying that with it between whiles, as you ſee occaſion, to eat off the exuberant fleſh, or to dry up the wound apace. If you do all this with judgement and diſcretion, it cannot fail of ſucceſs.

There are often places where the fleſh grows too hard; there you muſt uſe the ointment with aqua-fortis. When you want to dry only, the ſimple ointment is uſually ſufficient; but always ſupport the dreſſing well, and ſplinter it down tight.

When the fig grows to the tendon, or inner foot, or has communication with them, when you imagine it healed on one ſide, it ſpreads on the other, and extends ſometimes from the frog to the quarter

quarter, which it is often neceſſary to cut. When the quarter is cut, cauſtics, or potential cauteries, in powder or in ointment, may ſerve to deſtroy the tendon. You may make uſe of the ſame that was preſcribed for the horny javerts, for without deſtroying the tendon, you can never cure the fig.

If the fig be large (as there are ſome as large as a ſmall pullet's egg) it is very proper, after having well examined all round, to ſee if there be no void under the ſole, where certain roots of the fig are concealed, and after having cut and diſcovered all you can with your two-edged crooked inciſion-knife, it is very proper, we ſay, to take a good ſharp buttreſs, and cut off all the fig, and all the corrupted and bad fleſh you can ſee. Let your horſe afterwards bleed well, and then let the ſponges of his ſhoe be lengthened, and his paſtern tied with a cord, in order to ſtop the blood. Then cover all that you have cut with fine ſalt, and put over it turpentine, that has been mixed over a fire with ſuet chopped ſmall. You muſt ſoak a towel in this, and lay it on; if the blood comes ſo freely that you cannot put on the ſalt, mix it with the hot compoſition, bind the foot well, and ſplinter on the dreſſing. Put the ſame defenſative round the crown, and leave your horſe for three days without touching him, keeping him always in a dry place.

If the fig is in one of the hind-feet, as it commonly is, you muſt take great care to keep the dung from under it, that no moiſture may come to the part, becauſe moiſture is very hurtful.

When you take off the dreſſing you muſt gently cleanſe the hole, with dry tow upon your ſpatula; then put on ſome of the ointment with pledgets, and let the hole be adjuſted and compreſſed with an iron ſplinter. You will have no more occaſion for any defenſaſive round the crown. Two days after, when you take off the dreſſing, you muſt obſerve the colour of the fleſh, and waſh it with a ſecond water, as there may be occaſion. If you want to eat off any fleſh, have recourſe to your ointment with aqua-fortis, and continue the ſame dreſſing for ſome days; upon thoſe places where the fleſh looks well, put only the ſimple ointment.

If the fig grows to the tendon or the inner foot, the moſt certain remedy is, to unſole the horſe and then dreſs the fig in the manner preſcribed, making uſe of the razor when you ſee occaſion, or eating off the tendon with cauſtics; but wherever you can employ the razor; let the cauſtic alone, becauſe with the former you ſee beſt what you do, and may go juſt as far as you pleaſe, without putting the horſe to ſo much pain; if there be any ſplinter looſe from the inner-foot, apply the ſearing-iron to it rather than a cauſtic.

*Madam*

*Madam Feuillet's green balm.*

This has performed ſuch great cures upon mankind, that we thought it worthy of a place in the preſent work; we have not ſet down here the preſcription for the ſtyptic plaſter that is uſed with this balm, becauſe the diapalma, that may be had any where, is as good for it as the ſaid plaſter, and much cheaper. It is not the plaſter but the balm that effects the cure, the other ſerves only to keep it on, and prevent the air from hurting the wound.

This balm is very good for all wounds in horſes, in what part ſoever they happen, as alſo for pricks in the foot, and the like. It is made thus:

Take oils of linſeed, olives, and juniper-berries, of each two ounces; Chio-turpentine, or for want of that, other fine turpentine, two ounces; oil of bays, one ounce; oil of gillyflowers, one drachm; verdegris, pounded and finely ſifted, three drachms; white-copperas, two drachms; put the whole into a phial, and ſhake them till they incorporate, continuing ſo to do from time to time for a month; after which keep it for uſe.

You muſt waſh the wound with warm wine, the firſt time that you dreſs it; then heat the balm and ſpread it upon lint, over which put a ſticking-plaſter to keep it on; if the wound be deep

deep you muſt cover a tent with this balm, and put a plaſter over it.

You muſt uſe it, as an unguent, warm to freſh wounds, having firſt cleanſed them well with tow; ſprinkle over it, when thus applied, the lint of old cord that has been beat almoſt to a powder, and if you continue this every day, without ever moiſtening the wound, it will heal in any part whatſoever; it is equally good for all pricks, whether with nails, thorns, or ſtumps of trees.

*Gunſhot-water, or a vulnerary draught.*

Horſes that are wounded with a fuſee, muſket, or piſtol, cannot always be treated with large inciſions, eſpecially in hot weather in the army, where there are not always convenient places to put them out of the ſun, or to protect them from flies.

To find the bottom of theſe wounds and know their magnitude, you muſt ſearch them with a large iron probe, which is the only way you can do it. For this purpoſe, you muſt place them in the ſame poſture they were in when they received the ſhot; the wound often appears to be ſo deep, that you can convey neither ointment nor powder to the bottom of it. For this reaſon liquids, have been invented under the name of gunſhot-waters, which are injected into the wounds ſeveral times a day. You muſt introduce a tent dipped

in

in it to keep the wound open, and apply a linen-rag dipped likewiſe over the mouth of it, in the moſt convenient manner you can. Give the horſe half a pint of the ſame water every day in a draught; and in this manner wounds may be cured, which would otherwiſe prove mortal; not but that a great number, thus treated, do notwithſtanding die; but when a man has done all in his power, he bears his loſs with the leſs regret, becauſe it was inevitable.

If the horſe has a fever, you muſt have recourſe to clyſters, and not let him ſwallow any of the vulnerary-water, becauſe the ſimples that compoſe it are moſt of them hot, and would tend to increaſe the internal fire and the agitation of the humours, which naturally preſs towards the wounded part; but we very often ſee horſes that have very large wounds, without any fever. It is not the ſame with men, for whom the uſe of vulnerary-waters are almoſt aboliſhed, except among the Swiſs, who have ſtill a very good opinion of them.

*How to make a gunſhot-water.*

Take a new earthen pot, well glazed, in which put three quarts of ſmall white-wine, with an ounce and a half of round birthwort, raſped; put your pot over a moderate fire and let it boil gently or rather ſtew, till one quart of the wine is diminiſhed;

niſhed; juſt before you take it off, put in ſix ounces of ſugar in powder, and when that is diſſolved, ſet it by to cool. Uſe this water or rather this wine, to waſh or ſyringe the wound thrice a day; and every morning, as we ſaid, let the horſe drink half a pint of it, after you have ſtrained it well.

*Lapis mirabilis.*

This ſtone is as admirable for its good effects, as it is in its name; to compoſe it, take white-copperas, two pounds; roch-alum, three pounds; Armenian-bole, half a pound; litharge of gold or ſilver, two ounces; powder the whole, put it in a glazed earthen pot, and pour upon it three quarts of water; then let it boil gently over a moderate fire, without flame, till the water is quite evaporated. Let the fire be equal all round the pot; you will ſee a ſediment at the bottom, and when that is entirely dry, take the pot off the fire and let it cool. This matter ought, when cold, to be very hard, and it will grow harder and harder the longer you keep it.

The doſe of this ſtone is half an ounce, which you muſt put into four ounces of water; in a quarter of an hour it will diſſolve, and then if you ſhake it in a phial, the water will look as white as milk;

milk; moiſten with this the eyes of a horſe, morning and evening.

*A remedy for ſprains.*

Take pitch and tar, ſuch as are uſed for ſhips or carts, a pound; aqua-vitæ, a pint; boil them together over a charcoal fire, leſt any flame ſhould touch them, ſtirring them often for a quarter of an hour; then add two ounces of fine bole, in powder; and thicken the whole with flour; put this warm upon tow, and apply it all round the footlock, binding it on; renew it every two days, and there is ſcarce any ſprain that will not be well in three or four applications, provided you dreſs the part firſt with the eſſence of turpentine; the only inconvenience of this remedy is, that it tarniſhes and reddens white or grey hair, and the ſtain appears for ſome time after; however, the remedy is excellent, and in black horſes has no ill effect. It is admirable alſo for blows and ſwellings in the knees and hams; but in theſe caſes you muſt uſe no eſſence of turpentine. What makes this remedy the more to be preferred is, that though equally good with any, it coſts but a trifle.

*A ſolutive cataplaſm, or pultice for ſwelled teſticles.*

Boil beans in leys of wine, the thinneſt you can get, till they become ſoft; then pound them, and

make them into a paſte; add to two pounds of this paſte an ounce of caſtor in powder, mix the whole well and put it into a linen bag, capable of containing the teſticles. You muſt firſt greaſe them well with ointment or oil of roſes, and then put them into the bag, while the pultice is as hot as you can bear it upon the back of your hand; tie it on in the moſt convenient manner you can, and every twenty-four hours repeat the unction and heat the bag in the leys, made hot, which muſt be kept for that purpoſe; continue to proceed thus till the ſwelling diſſipates.

*Purging-paſte for colds.*

Take hepatic-aloes, in powder, four ounces; ginger, three ounces and a half; ſal nitre, purified, five ounces, with an equal quantity of honey and ſweet oil; and make the whole into a ſoft paſte.

The doſe of it, as an alterative, is half an ounce made into a ball, to be given night and morning, which ſhould only keep the body of the horſe regularly open, but by no means to purge him as a common doſe of phyſic.

The full doſe of this paſte, in colds, after bleeding your horſe, is two ounces; and if for a ſtrong coach or cart horſe, two ounces and a half of

of it. During the operation warm maſhes muſt be given.

The beſt way to keep the paſte is, to put it into an earthen jar, and cork it down tight; if it gets hard, beat it up again with more oil and honey.

*For a fever or cold, when a horſe ſhakes as in an ague.*

Inſtead of this being an inflammatory fever, as mentioned in Watſon's Farriery, it is an intermitting fever, and ſhould be treated in the following manner;

*Fever paſte.*

Take galangal and gentian-roots, in powder, of each twelve ounces; teſtaceous powder comp. ten ounces; emetic tartar, levigated, ſix drachms; grind them well together in a large mortar, then with a ſufficient quantity of any ſyrup and ſweet-oil, make them into a ſoft paſte, which keep in an earthen pot for uſe.

The doſe of this febrifuge is an ounce two or three times every day, till the horſe recovers; warm maſhes may be given him, but no cold water.

This remedy exceeds every quack fever-powder whatever; and may be given in inward com-

plaints, where the farrier cannot immediately account for a horſe's ſickneſs and lameneſs.

*Powder for fevers.*

Take of the beſt Hungarian antimony, in powder, eight ounces; ſhavings of hartſhorn, the ſame quantity; put them into a crucible, then place it in a furnace, and raiſe the heat by degrees, till the fire is very fierce, and the powder becomes as white as poſſible; after which take it out and cool it gradually. In all fevers firſt bleed; then adminiſter half an ounce of the powder, in any form you pleaſe, three times every day, keep him warm, and give him warm maſhes and gentle exerciſe.

*Another fever powder.*

Take two ounces and a half of calcined antimony, to which add one drachm of emetic tartar, levigated, mix them very well in a mortar for uſe; doſe the ſame as the former.

*Common purge.*

Barbadoes-aloes, in powder, ten drachms; mercurius dulcis, prepared, two drachms; ſal polychreſt, one ounce; galangal-root, in powder, half an ounce; oil of aniſeed, one drachm and a half; with a ſufficient quantity of any ſyrup make two balls, and give them the horſe in the evening, keeping him from his hay. In the morning

morning give him plentifully of warm maſhes with gentle exerciſe.

*A comfortable ſtomach cordial.*

Take ſenna and jalap, in powder, of each two pounds; raſpings of gum-guaiacum, one pound; aniſeed and grains of Paradiſe, pounded, of each half a pound; pearl-aſh, ſix ounces; Spaniſh-liquorice, ſliced, one pound; ſpirit of wine, rectified, ſix gallons; digeſt all together in a warm place, eight days, and when ſtrained it is fit for uſe.

In colics and violent pains in the bowels, nothing can be better contrived; half a pint is a full doſe, night and morning, till the horſe recovers.

A

# TREATISE

ON THE

# STUD.

A STUD ſhould be fixed upon dry ground, for the more dry and brittle the graſs is, the more light, ſlender, and ſound, the horſes that eat it will grow; whereas thoſe who feed on very juicy graſs, are uſually very thick and clumſy in the head, the neck, and even the whole body, and ſuch graſs grows only in moiſt and watery places; beſides, the hoofs thereby being too much moiſtened, become groſs and heavy, ſo that when you raiſe a race of colts out of fine horſes and mares, if you breed them up in humid lands, their ſlender legs are unable to bear the weight of a great head, a thick neck, a groſs body, and to lift hoofs that are too large and heavy; all which defects are cauſed by an over-abundance of juice in the graſs. A dry ſoil, therefore, is abſolutely neceſſary for the ſeat of a ſtud, becauſe the graſs there being more whole-

ſome

ſome, it makes the colts ſounder, more vigorous, light, and courageous, which are all the good qualities we can wiſh for in a horſe. The ſtud being ſituated in ſuch a place, muſt be governed in the following manner:

Firſt, You muſt always keep the place clean to which the colts retire, and change the litter in it at leaſt twice a month in winter, and four times in ſummer.

Second, Take care when you perceive any mares to grow heavy, to ſeparate them from others that are not with foal, becauſe the latter being more light and wanton, may kick the big ones, and make them caſt their foals.

Third, Thoſe mares that have caſt their foals, ſhould be expelled the ſtud, as improper for breeding, becauſe were they afterwards to produce a foal, it would be of little value.

Fourth, When a mare has been kept three years in a ſtud without producing a foal, it is obſtinacy to keep her there any longer, for though ſhe ſhould give you one the fourth year, you run a great hazard of waiting a long time for a ſecond, and the colt that ſhe produces, will never be worth one quarter of the expence that the mare will put you to.

Fifth, You muſt not put colts of one year old into the ſame incloſures with thoſe of two, three, or four years, becauſe the latter being much ſtronger

ſtronger, will kick the others, and hinder them from feeding, which muſt ſpoil their growth.

Sixth, You muſt not let ſtone-colts of a year old, run with mares of the ſame age, nor with any other mare-colts whatſoever. They begin to have ſome ſenſation at that age, and what by their play and their feeding with thoſe young females, they pall their appetites, and ſometimes ruin and deſtroy themſelves. To avoid this inconvenience, mares of two years old ſhould be put with their dams, and the males of two, with thoſe of three or four.

Seventh, Neither muſt ſtone-colts be ſuffered to come near grown mares, in what ſeaſon ſoever it may be, for this would certainly do them harm, and in covering-time make them ſhed their ſeed, how gentle ſoever they might be.

Eighth, Never take a colt from graſs till he is three years and a half old, nor begin to mount him till he is five, which is the way to make him long ſerviceable.

Ninth, It would be very proper to have two large incloſures, one to put the mares in when they foal, that they may be at reſt, leaving them together till they have all foaled, and the other to contain the reſt of the ſtud, that they may not mingle with the ſtone-colts, becauſe there is more to be apprehended then, than at any other ſeaſon, as well on the colts' account, as on that of the mares.

Tenth,

Tenth, Theſe parks are very convenient to lodge the ſteeds in at night, in the ſeparate diviſions. They feed there in ſummer, more at eaſe by night than by day; not being incommoded either by heat or the flies.

Eleventh, In order to know if all the mares that were covered have conceived, and if there are not ſome of them that ſtill want the horſe, you muſt bring out a ſtallion that neighs much, and lead him within piſtol-ſhot of the mares, holding him tight, that he does not get from you. All thoſe mares which ſurround the ſtallion, give you notice that they are yet in luſt. But as there are ſome mares who will take horſe after they have retained, the moſt ſhort and eaſy way of knowing the truth is, to pour water into their ears; for if they ſhake it out violently in a moment, it is a mark they have not conceived. You muſt then lead them to other horſes, and in the moment the ſtallion has done his office, let the mare be bled in her jugular vein.

Twelve, It is a very good method to have your mares covered about the middle of March, that if they do not retain, you may have time to get them covered again; for when the month of May is once over, the ſeaſon is no longer proper for that buſineſs, becauſe in order to make a colt vigorous, he ſhould have two ſummers for one winter, which cannot be, if the mare foals in the

latter ſeaſon, but the colt on the contrary, will be weak and languid, through the hardſhips he ſuffers the firſt year.

Thirteen, If the mare brings forth her foal with difficulty, you ought to aſſiſt her, giving her good ſweet oil, and flowers of ſulphur, and ſometimes to ſtrengthen her, venice-treacle in wine, or a doſe of good cordial balls, which no man who pretends to manage a ſtud, ſhould ever be without, it being of continual uſe, as well for colts as for mares and ſtallions.

Fourteen, You ſhould take care to get your mares covered again in a fortnight at fartheſt, after they have foaled, becauſe if you neglect it longer, the beauty of the ſeaſon for that end will be over.

*How to couple ſtallions with mares, in order to make them bring forth well-proportioned foals.*

Among the foreign ſtallions, ſome will get ſmaller foals, and ſome larger. You ought to put them to mares more or leſs corpulent, that the foals may be brought forth in good proportion.

A Barbary, Arabian, or Turkiſh ſtallion, to be a good one, ſhould be tall, very ſlender, very high before, young, and without any defects. As the colts they get are uſually larger than themſelves, but extremely ſlender, you muſt give them mares

mares that have capacity enough, and are very thick in their bodies. The Engliſh mares are the beſt for this purpoſe, for the Italian ones produce feeble foals that cannot be depended on. The Barbary mares cannot nouriſh their foals in France; the Engliſh, therefore, are preferable to all others.

An Engliſh ſtallion to be a good one, ſhould be ſtrong, thick, and every way well ſet, becauſe the colt he gets is uſually ſmaller, and leſs vigorous than himſelf.

The Spaniſh ſtallions ſeem not to be ſo uſeful in France, as thoſe of other countries. But if a man has a mind to breed from them, he ſhould chuſe thoſe that are very ſtrong, and well proportioned.

As for beauty and ſpirit, they never want thoſe qualifications. Though we have mentioned no horſes for ſtallions but Barbs, Arabians, Turks, and thoſe of England and Spain, it does not follow from thence, that others are to be rejected, or that you may not get from them colts that are both handſome and good. But the former being ſprightly, delicate, and courageous, they get foals of a much more noble and lofty ſtature, and conſequently better for perſons of quality. As to French mares, who are deſcended from horſes of reputation, ſuch as the ſtallions we have juſt mentioned, thoſe that are the higheſt before, are

the beſt. You may find a mare that is very handſome to the eye, but will never produce a colt of any value, becauſe ſhe was got by a worthleſs horſe; not but that the colt may at firſt appear handſome and well made, but the larger he grows, the worſe he will look. Whereas a mare of good deſcent, will bring forth a colt that does not at firſt appear ſo beautiful, but which grows every day in beauty, as well as in ſtature. Take great care therefore, that your mare be of a good race, becauſe this is a matter of great importance.

The ſtallions, as well as the mares, ſhould be without any defect, that is, their ſight ſhould not be impaired; they ſhould not be low in their reins, nor have their legs ſpoiled by curbs, veſſignons, or ſpavins. In a word, let them be ſound all over their bodies, leſt their offspring partake of their infirmities, for many times theſe diſtempers are hereditary in horſes.

It is neceſſary, likewiſe, that neither the horſe nor the mare ſhould have ſtrained themſelves. This is what people call regard; but on the contrary, when they have a good ſtone-horſe, they make a ſlave of him till they have woren him out, and then his laſt ſervice is to be kept for a ſtallion; as if it was ſufficient that a horſe has been once good, to make the colts he gets afterwards, ſtrong and vigorous. We cannot imagine what

reaſon

reaſon they can aſſign why a horſe entirely woren out, and conſequently without ſtrength, ſhould be able to get a vigorous foal. Doubtleſs this is impoſſible in nature, for we believe that the moſt certain means to have good and ſprightly foals, is to look out for, and procure at any price whatſoever, a ſtone-horſe that is ſtrong, handſome, well made, and without defect, one that has never been rode; but in order to break him, you ſhould be informed of his qualities and ſhare of ſpirits, and let him have a mare equally well conditioned. A ſtallion of this kind may get good foals, even at twenty-five years of age, which no horſe can do that has been woren out with labour.

In order that a mare ſhould produce good foals, let her not be covered till ſhe is four years of age, and take her out of the ſtud in her 16th or 17th year. A ſtud regulated in this manner, will produce the fineſt horſes in the world, by only obſerving the proper ſeaſons to have the mares covered, that their foals may have two ſummers for one winter.

A mare goes with foal eleven or twelve months, or ſome days, more or leſs, for there is no certain time; and the older ſhe is, the longer ſhe carries her burthen. Some perſons amuſe themſelves with reckoning the years of a mare, to determine from thence, the day of her foaling, but this is very uncertain, and only an imaginary piece of knowledge. Such is the folly of many other peo-

ple,

ple, that they pretend the ſtate of the weather, when a horſe covers a mare, contributes much to the goodneſs or badneſs of the colt. Thus if it be rainy, windy, or ſtormy, in the moment that the mare conceives, the colt will be vicious, but that on the contrary, he will be very docile if the air is then clear and ſerene.

It is however certain, in ſpite of all that ſuch people ſay, that a horſe produced between a mare and a ſtallion, which are both perfect, will always be good, well ſhaped, and vigorous, if he be got in the right ſeaſon; for this, joined to the manner of bringing him up, is the only thing that can contribute to his perfection. You muſt aſſiſt your mare in the feeding of her foal, by giving him provender, as bran, with wheat or oats cracked in the mill, and mixed among it.

A colt ſucks for ſix or ſeven months. When you take him from under his dam, you muſt feed him morning and evening with oats wetted, and bran, during the winter ſeaſon. In the ſpring you muſt take him off gradually from this diet, till the graſs grows hard and high, for if you let him eat the tender ſprouting graſs, it may looſen his belly too much, and weaken him, and at laſt, perhaps, kill him. You ſhould treat him thus from year to year, till he is four years old, taking great care not to let any whole grain come in his way; for as the muſcles of his jaws are yet very tender,

tender, he may, in ſtriving to chew, bring down defluxions on his eyes, to his great prejudice.

A ſtone-colt that is well ſhaped, may at four years of age be ſuffered to cover mares, if you are ſure he never received any hurt before. He might even ſerve for this office at three years old, but as he is not then quite at full growth, it is better to wait till he is four, when there will be a greater chance of his getting a colt that may be good for ſomething.

# INSTRUCTIONS

FOR

# COMMISSIONERS,

WHO GO TO BUY HORSES IN FOREIGN COUNTRIES,

IN ORDER TO MAKE THEM ACQUAINTED WITH THEIR DEFECTS.

THE Perſian horſes are very good and vigorous, but they are ſubject to have high and cloſe heels, and alſo liable to incaſtellations; they are very good to breed from.

The Arabian horſes are alſo very good, but are apt to have large feet; they are alſo good ſtallions.

The Tartary horſes are of a middling ſtature, and have good feet like mules.

The Barbary horſes have delicate feet, and are ſubject to the chilling of the ſhoulders; their breed is admirable, when you can get a full-ſized horſe, and for the generality very good.

The

The Poliſh horſes are ſmall and hang down their heads; they will do good ſervice, but eat a vaſt deal.

The Croatian horſes are much like mules, and have good feet.

The Hungarian horſes are good courſers; they have good feet, but are with difficulty held in, and carry the noſe almoſt always poking forwards.

The Swediſh horſes are liable to the malanders and tranſverſe mules.

The Neapolitan horſes are vigorous and good courſers, ſubject to have weak feet, to be reſtive, malignant, and treacherous.

The Spaniſh horſes are fiery and good for every thing, eſpecially for war, and the manage; they are ſubject to dry ſpavins.

The Daniſh horſes are very ſerviceable, but good for nothing till they are ſix or ſeven years old; they are ſubject to bleymes and defects in the ſight.

The Italian horſes are good courſers; ſubject to bleymes and bone ſpavins, to be reſtive and malignant.

The German horſes are ſtrong, fit for the ſaddle and the coach; but ſubject to javarts and watery legs.

The Swiſs horſes are good for draught, and for the train of artillery; but liable to defects of ſight, which they ſeldom have very clear; they have much hair on their legs.

The Dutch and Frizeland horſes are good for the coach; are tall and fat, but ſubject to have flat feet, curbs in the houghs, veſſignons, greaſy-ſpavins, and ox-ſpavins.

The Flemiſh horſes have large heads, and much hair on their legs; are ſubject to grapes round the hoof, to figs in the fruſh, and be full of humours in their legs.

The Norman horſes are excellent, and good for the chaſe; they have good feet, and ſome of them are fit for the coach; many of them are ſubject to diſtempers in the eyes.

The horſes of Brittany are not fit for ſervice till they are five or ſix years old; they have heavy heads, a cloudy ſight, and much hair on their legs.

The Poitevin horſes have large heads, are ſubject to be moon-eyed, have much hair on their legs, and wide open feet.

The Limoſin horſes are very good, are fit for the chaſe, have good feet, and good ſight; ſome of them are no ways inferior to the Engliſh horſes in

in any thing, which are, however, in general, indiſputably the beſt horſes in the univerſe.

The Engliſh horſes are good, eaſy to ride, and excellent for the chaſe; but ſubject to bleymes and ſeams, and to have flat and cloſe heels.

TO

# PRESERVE AND RESTORE A STABLE INFECTED BY THE DIFFERENT MALADIES OF HORSES.

FIRST, when a ſtable is ſpoiled by having had in it glandery horſes, you muſt begin by unpaving it, then take away at leaſt half a foot of earth or ſand, becauſe the urine that is ſoaked in it, may infect the air, and in the place of what you take away, put freſh earth or ſand.

If the wood of the rack, manger, pillars, and bars, is not very old, and the infection has not been of long ſtanding, it will be ſufficient to ſcrape them well, and waſh them with hot water.

When the whole is dry, take pot-aſh and diſſolve it in boiling water, with which waſh them a ſecond time; you may diſſolve what quantity of it you pleaſe, in proportion to the ſize of the ſtable, but the medium is, a pound of pot-aſh to a common pail of water.

When

When the whole has been well ſcoured with this ley, take olibanum, and the root of Bohemian angelica, of each a like quantity, bruiſe them coarſely together; and take three or four pots or chaffing diſhes, according to the magnitude of the ſtable, and put in them lighted charcoal; then ſhut up all the windows and doors, and put ſome of this compoſition upon each fire, where it will ſmoke very much.

Get out of the ſtable and ſhut the door cloſe after you; and thus leave the ſtable cloſe ſtopped up for twenty four hours, in which time it will be purified.

When you have opened the doors and windows long enough to let out the ſmoke, and let in the freſh air, you may put in it any horſe with ſafety; but if the diſtemper be any thing leſs than the glanders, there is no occaſion for taking up the pavement, becauſe the waſh and the fumigation, will of themſelves be ſufficient. If the wood of the rack or manger be old and rotten, you muſt take them down and put up new, eſpecially after the glanders.

THE

THE

# ANCIENT METHOD

OF

# PREPARING RUNNING-HORSES.

A Running-horſe ſhould be ſomewhat long bodied, of great mettle, good wind, good appetite, very ſwift, and ſenſible of the ſpurs. He ſhould be of an Engliſh breed, or a Barb of a little ſize, with pretty ſmall legs; but the back ſinews at a good diſtance from the bone, ſhort jointed and neat, well-ſhaped feet, for large feet are not at all for this employment.

To prepare him for a race, give him neither hay nor oats, but bread made of half barley and half beans, baked in large and thick cakes; let them be rather ſtale than new; three pounds at noon and three pounds at night is ſufficient in twenty-four hours. Inſtead of hay give him wheat-ſheaves, unthreſhed, with the ears upon them; let his drink be luke-warm, mixed with a handful or two of bean and barley meal; cover him well in a ſta-

ble

ble, without light, and let him be well littered and kept warm night and day. On the fifth day in the morning, after he has ſtood three hours on the bridle, take a pound of freſh butter before it be waſhed or ſalted, and mixing with it twenty-five or thirty cloves of bruized garlic, make your horſe ſwallow it in balls, as big as large walnuts, with a quart of white-wine, keeping him afterwards with his head tied up in the bridle, pretty high, for three hours; then feed him as before with bread, warm-water, and wheat-ſheaves, but moderately of the laſt, becauſe you are not to fatten him, but on the contrary, by diminiſhing and hardening his fleſh, to increaſe his wind and vigour.

On the ſeventh day air him abroad for the ſpace of an hour, juſt after ſun-riſing; and as much at night before ſun-ſet; ſometimes racking or ſtepping, and ſometimes galloping him. If he continue too fat, then do the ſame before ſun-riſing and after ſun-ſet; then bring him back, rub and cover him well, and feed him as uſual; continue to air and exerciſe him every day, giving him every fifth day his pound of butter, made up with garlic into balls; but you are to obſerve not to air or take him abroad on the day that he takes his balls, nor the day following:

When

When he has taken three doſes of theſe garlic-balls, that is, fifteen days after you firſt began to put him in keeping, you are to exerciſe him for two hours in a morning and as much at night; ſometimes on full ſpeed, then at a good gallop, and afterwards at a ſtep, that he may recover his wind; remembering, as before mentioned, not to air him on the day he takes his balls, nor on the day after; but on the other days, when you have galloped him hard, diſmount and lead him home, well covered, then rubbing and wiſping him all over until he be perfectly dry, let him ſtand upon his bridle, with his head tied up for three hours, then give him his water ſomewhat more than luke-warm, and feed him as before; and thus you are to order him for a month, giving him his garlic-balls every fifth day; but on the laſt five or ſix days of the month, you are to run and gallop him as ſharply as his wind will allow him, giving him liſtenings now and then in his running to take his wind. Let his exerciſe be for two hours in the morning, and as much at night; leading him always back to the ſtable in your hand, having firſt well covered him, and then rubbing and drying him, give him his water and meat as before directed.

If,

If, after all this, his dung be ſtill ſlimy and viſcous, it ſhews that he is not as yet prepared; you muſt therefore continue his balls and exerciſe until his dung comes from him pretty dry, and without humidity.

Two nights before the match, he ſhould be put in the muzzle all night, and about two in the morning, give him three pints of ſack, wherein twenty or twenty-five new-laid eggs are beaten, then tie him up to the rack two hours, after which mount him, and put him to a gentle gallop, then to a full ſpeed, as long as his wind will allow it; afterwards to a gallop again, to give him wind, and thus you are to exerciſe him three hours, then cover him, lead him home in your hand, and rubbing and drying him as uſual, tie him up with the bridle to the rack, for three hours; then give him his water, but it muſt now be as hot as he can drink it, and then feed him as formerly.

On the day of the match, give him his former quantity of ſack, and yelks of eggs, well beaten together two hours before he is to run; and he muſt be alſo tied up to the rack ſix hours before you give him his ſack; and on that day and the preceding, he is to eat but half his allowance of bread at each meal, and but half the wheat-ſheaves you were accuſtomed to give him.

Upon the days your horſe is not to run, you are to feed and exerciſe him as before mentioned;

but if you find him exactly prepared, then give him garlic-balls every ninth day only.

If in the time of his dieting, or afterwards, the horſe ſhould diſguſt, or become coſtive, give him good clyſters, made of two quarts of milk, and a pint of ſallad oil, the whole being well mixed, and luke-warm.

Theſe kinds of horſes are never to be rode but with very ſmall ſnaffles, for fear of hindering their breathing and wind, which one of our large bits would certainly do. The rider muſt lean a little forward, to prevent the wind taking too much hold upon his body; a cap inſtead of a hat; very ſmall and ſharp ſpurs; and he is to ſpur near to the flank, with little ſtrokes, becauſe ſtrong and great ſtrokes rather hinder than augment his ſpeed.

The method here ſet down by Monſieur Sollyſel, concludes the firſt part of his book; but he having never made trial of it himſelf (his countrymen being generally great ſtrangers to this diverſion) he gives it only upon the recommendation of an Engliſh jockey. We thought, therefore, it would not be amiſs, that ſince he differs ſo much from the manner of preparing race-horſes uſed at this time, to ſubjoin the modern way of preparing horſes for a courſe collected from the beſt authors who have treated on this ſubject.

THE

THE

# MODERN WAY

OF

# PREPARING RUNNING-HORSES.

A HORSE deſigned for racing, ſhould be tractable, and no ways reſtive or ſkittiſh; his head ſhould be ſmall and ſlender, with large noſtrils, and a large thropple. Let him have alſo a pretty large reach, and good feet. His age ſhould be ſix years at leaſt, no horſe under that age having ſufficient ſtrength for a four-mile courſe, without running the hazard of being over-ſtrained.

The next thing to be conſidered, is the limitation of time for preparing a horſe for a match; and it is generally agreed by judicious horſemen, that (unleſs the match be for an extraordinary ſum) two months are ſufficient. But herein you are to have regard to the ſtate of your horſe's body.

As firſt, If he be very fat, foul, or taken from graſs.

Secondly, If he be extremely lean and poor.

Thirdly, If he be in good caſe, and hath moderate exerciſe.

For the firſt, you muſt take two months at leaſt to bring him into order, for he will require much airing, great carefulneſs in heating, and diſcretion in ſcouring.

For the ſecond that is very poor, get as long time as you can, and let his airings be moderate, and not before or after ſun, feeding him liberally, but not ſo as to cloy him.

For the third, a month or ſix weeks may be ſufficient.

In the next place, you muſt conſider his particular conſtitution, as if he be fat or foul, yet of a free and waſting nature, apt quickly to conſume and loſe his fleſh, in this caſe, you muſt not have too ſtrict a hand, neither can he endure ſo violent exerciſe as if he was of an hardy diſpoſition, and would feed and be fat upon all meats and exerciſe.

Again, if he be in extreme poverty, and yet by nature very hardy, and apt ſoon to recover his fleſh, and long to hold it, then by no means ſhould you have ſo liberal and tender a hand, nor forbear that exerciſe which you would uſe to a horſe

horſe of a tender conſtitution, weak ſtomach, and free ſpirit.

*The firſt fortnight's feeding of a horſe that is fat, foul, or newly taken from graſs.*

As ſoon as his body is emptied, and the graſs voided, which will be within three or four days at moſt, you ſhould every morning, at break of day, put on his bridle, being firſt waſhed in ale or beer, and after you have dreſſed him, cover according to the ſeaſon of the year; then clap on his ſaddle, and brace the foremoſt girth pretty ſtrait, and the other ſomewhat ſlack, and wiſp him on each ſide of his heart with pretty ſoft wiſps between the two girths, that both of them may be of equal ſtraitneſs, then put before his breaſt a warm breaſt-cloth, and let it cover both his ſhoulders; then (if you have taken no tobacco) ſquirt a little ale or beer out of your mouth into the horſe's, leaving ſomebody to trim up the ſtable in your abſence; for your horſe muſt always ſtand upon plenty of dry litter night and day; and it muſt be either wheat or oat ſtraw, for barley and rye ſtraw are unwholeſome, the firſt cauſing heart-burning, the laſt ſcouring.

When you are mounted, walk him a foot pace, which we call racking, for a mile or two (for you muſt neither amble nor trot, becauſe they are both prejudicial to ſpeed) upon ſmooth and equal ground,

ground, and if it has a gentle riſing, ſo much the better. Then gallop him gently, and afterwards walk him ſoftly, that ſo he may cool as much one way as he warms another; and when you have thus exerciſed him a pretty ſpace, and the ſun is newly riſen, rack him down to ſome freſh river, or clear pond, and there let him drink at his pleaſure.

After he hath drank, bring him gently out of the water, and rack him away very eaſily, and not as ignorant grooms do, who, as ſoon as a horſe comes out of the water, force him into a gallop, which either teaches him to run away with you as ſoon as he is watered, or makes him refuſe to drink, fearing the violence of his exerciſe that is to follow.

When you have thus walked him a little calmly, put him into a gentle gallop, and exerciſe him moderately, as you did before; then walk him a little ſpace, after which, offer him more water; if he drinks, then gently gallop him again; if he refuſes, then gallop him to occaſion thirſt, and thus always give him exerciſe both before and after water.

When you think he hath drank ſufficiently, bring him home gently, without a wet hair, or the leaſt ſweat upon him; and when you are come to the ſtable door, provoke him to urine if you can, by ſtirring up ſome of the litter which is at the door, under him. If he does not ſtale at

firſt

firſt it is no matter, as a little cuſtom will bring him to it. It is good for his health, and will keep the ſtable clean.

This done, tie his head up to the rack in his bridle, then rub down his legs with hard wiſps, as ſtrongly as you can; looſe his breaſt-cloth, and rub his head, neck, and breaſt, with a dry cloth; then take off his ſaddle, and rub him all over, eſpecially his back, where the ſaddle ſtood; then, cloathing him according to the ſeaſon, girth on his ſurſingle, and ſtop it with ſmall and ſoft wiſps, which will make it the eaſier. Stop his feet with cow dung, or his own dung a little moiſtened with freſh water, then throw into the rack a little bundle of hay, well duſted, and wrapped hard together, and let him eat it ſtanding upon his bridle. When he hath ſtood ſo an hour, take it off, and rub his head and neck well with a hempen or hair cloth; then drawing his bridle, make clean the manger, and put a quart of ſweet, dry, old, and clean-dreſſed oats, into a ſieve that will keep the good and full, and let the light oats go through it; and if he eats them with a good appetite, let him have again the ſame quantity, and ſo let him reſt till eleven o'clock, with the windows cloſe, for the darker you keep him the better, becauſe it will make him lie down and take his reſt, which otherwiſe he would not

ſo

ſo readily do. At eleven o'clock rub his head and neck as before, and give him another quart of oats, after which leave him in the dark ſtable for an afternoon, at which time rub and feed him as before, giving him another ſmall bundle of hay, and leave him dark till watering time.

Watering time being come, dreſs him as in the morning, then clothe, ſaddle, and lead him forth, and urge him to empty; then mounting him, rack him abroad, but not to riſing ground as in the morning, if you can find other that is plain and level, and there air him in all points as you did in the morning, galloping him gently before and after his water, rack him home to the ſtable door, and in your way let him ſmell upon every old and new dung you meet with, to provoke him to empty. Being alighted, do as you did in the morning, both without doors and within, and ſo let him reſt till nine at night.

At nine, rub down his legs well with wiſps, and his head and neck with a clean cloth; then turning up his clothes, rub all his hinder parts; give him a quart of ſifted oats, a ſmall hard bundle of hay, toſs up his litter, and leave him till next morning.

Thus you ſhall keep him conſtantly for the firſt fortnight, which will ſo take away his foulneſs and harden his fleſh, that the next fortnight, you may venture to give him ſome gentle heats. It may be

be objected that many horſes that have good appetites, would be half-ſtarved, or become very weak, if they were ſcanted to a quart of oats at a meal; to this we anſwer, that we do not ſet down this proportion as an infallible rule, having told you that if he eats it with a good ſtomach, you may give him another, leaving the proportion to your own judgment and diſcretion.

*The ſecond fortnight's feeding.*

In this fortnight you ſhall do all things as in the firſt, only before you put on his bridle, you ſhould give him a quart or better of clean-ſifted oats, then bridle, dreſs, clothe, ſaddle, air, water, exerciſe, and bring him home, as in the firſt fortnight, only you ſhould now put no hay into his rack, but give it him out of your hand, handful after handful, and leave him on his bridle for an hour; then after rubbing, &c. ſift another quart of oats, and ſet them by; then take a loaf of bread that is three days old, at leaſt, made after this manner:

*The firſt bread.*

Take three pecks of clean beans, and one peck of fine wheat; mix them together, and grind them into pure meal; then bolt it pretty fine, and knead it up with a ſufficient quantity of freſh

barm, to lighten it, but with as little water as may be, kneading it well in a trough, break it and cover it warm, that it may ſwell; then knead it over again, and mould it into loaves; break or knead them well, and let them ſoak ſoundly; after they are drawn from the oven turn the bottoms upward and let them cool; at three days old you may give him this bread, but not ſooner, for nothing is more apt to ſurfeit than new bread. If it be clammy, ſo that the horſe diſlikes it, cut the loaf into thin ſlices, and lay it abroad in the ſieve to dry; then crumbling it ſmall amongſt his oats, you may give it him without danger. When you give him this bread, chip it very well, and crumbling it ſmall, mix it with the oats you had ſifted and ſet by; you may give him as much bread as may countervail the quantity of oats, or more if you think fit, and then leave him till eleven o'clock; then give him the ſame quantity of oats and bread, and let him reſt till the afternoon.

At one in the afternoon, if you intend not to give him a heat the next day, feed him with bread and oats as in the forenoon, and ſo every meal following for that day.

If you intend the next day to give him a heat, then give him only a quart of clean-ſifted oats, but no hay, and let him reſt till evening. At four o'clock give him the like quantity of clean-

ſifted

ſifted oats; and after he has eaten them, bridle, dreſs, clothe, ſaddle, water, air, exerciſe, and bring him home; order him as before; give him neither hay nor bread among his oats for that night; after he hath ſtood about an hour upon his bridle, give him another quart of oats, and when he hath eaten them, put a clean muzzle upon him, and let him reſt till nine at night; at nine, give him another quart of oats, and when he hath eaten them, put on his muzzle again, toſs up his litter, and leave him till next morning.

The muzzle is to keep the horſe from eating up his litter, gnawing boards, mud-walls, &c.

They are made ſometimes of leather ſtamped full of holes, but theſe are unwholeſome, being too cloſe and too hot, make a horſe ſick, and cauſe him to be reſtleſs. The beſt muzzles for winter or ſummer, are the net muzzles, made of ſtrong pack-thread, and netted very thick and cloſe in the bottom, and then enlarged upwards to the middle of the horſe's head, at which place they are bound about with a tape, and have alſo a loop and ſtring, whereby they are faſtened to the horſe's head.

The next morning, come to him before day; if he be ſtanding on his feet (but if he be laid down by no means diſturb him) take a quart of well-ſifted oats and rub between your hands with ſome ſtrong ale or beer, but let them not be too moiſt

for fear of offence, and when he hath eaten them, dreſs and ſaddle him as formerly; then being ready to go forth, tie his bridle-rein over the top of the rack, ſo as you draw his head aloft. Take a new-laid egg or two, and breaking them in his mouth, make him ſwallow them down, waſhing his mouth after it with a little beer or ale, and ſo lead him out, not forgetting to provoke him to empty at the door; then mount and rack him gently to the courſe, making him by the way to ſmell at every horſe's dung you meet with.

When you are come within a mile or thereabout of the ſtarting-poſt, diſmount, take off his body and breaſt cloths, and girth on the ſaddle again. Then ſending away your groom with thoſe cloths, and the dry rubbing-cloths, let him ſtay at the end of the race till you come. This done, rack your horſe gently up to the ſtarting-poſt, if there be any, making him ſmell at it, ſo that he may know the beginning and end of the courſe. There ſtart him roundly and ſharply, and give him his heat according to the following directions:

*Some few things to be obſerved in giving of heats.*

Firſt, Two in a week are ſufficient for any horſe.

Secondly, That one of them ſhould always be given on that day of the week on which your

your horſe is to run his match, and alſo to be the ſharpeſt for increaſing his ſwiftneſs, the other being only a ſlow galloping over the courſe, more to increaſe wind and cauſe ſweat, than to improve ſpeed. Suppoſe your match is to be on a Monday, then your heating days muſt be Mondays and Fridays, and the ſharpeſt heat to be on the Monday. If the day be Tueſday, then Tueſdays and Saturdays. If Wedneſday, then Wedneſdays and Saturdays, by reaſon of Sunday. If Thurſday, then Thurſdays and Mondays, and ſo of the reſt.

Thirdly, You ſhould give no heat, but in caſe of neceſſity, in rain or foul weather, but rather defer hours and change days, for it is unwholeſome and dangerous. Therefore in caſe of ſudden ſhowers and uncertain weather, you ſhould have for your horſe a hood, lined quite through, to keep out the rain; nothing being more dangerous than cold wet falling into the ears and upon the nape of the neck and fillets.

Fourthly, Give your heats, the weather being ſeaſonable, at the break of the day, but by no means in the dark, as being unwholeſome and dangerous.

Fifthly, When you begin your heat, ſtart your horſe roundly and ſharply at near a three-quarters ſpeed, and if it be on the day of the week that his match will fall, then according to his ſtrength, goodneſs

goodneſs of wind, and chearfulneſs of ſpirit, run him the whole courſe through, but do nothing in extremity, or above his wind, but when you find him a little to yield, then draw a little, and give him eaſe that he may do all with pleaſure, and not with anguiſh. This manner of training will make him delight in his labour. The other heat in each week muſt be more gentle, the deſign of it being only to increaſe wind, and cauſe ſweat; that ſo the ſcouring you are to give him after his heat may have ſome looſe greaſe to work upon and bring away; you ſhould therefore let him go over the courſe at a ſlow and gentle gallop; for if both the heats were ſmart, the horſe would not be able to hold out, there being ſo ſhort an intermiſſion between them for him to reſt and recover his vigour; alſo in courſing you ſhould obſerve upon what ground he runs, whether up-hill or down-hill, upon ſmooth or rough ground, wet or dry, a level, or ground ſomewhat riſing, that you may manage him for your advantage.

When you have finiſhed your heat, and gently galloped him up and down, the groom being ready, ride him into ſome warm place or corner, and with your ſcraping knife, made of a broken ſword-blade, or of a thin piece of old hard oak, ſcrape off the ſweat from every part, buttocks excepted, until you can make no more ariſe, moving him a little, at times, leſt his limbs become ſtiff, then

then with dry cloths rub him all over, take off his ſaddle, and having ſcraped his back and rubbed it dry, put on his body-cloth and breaſt-cloth, and girth on the ſaddle again; then mount and gallop him gently now and then, wiping his head, neck, and body, as you ſit upon his back. Laſt of all walk him about the fields to cool him, and when you find him begin to dry apace, rack him homeward, ſometimes ſtepping, ſometimes galloping. Bring him not to the ſtable till you find him thoroughly dry, and when you are come to the door, entice him to empty; then tie him to the rack, and, having prepared it yourſelf before, or at leaſt one for you againſt your coming, give him one of theſe ſcourings following:

*Two excellent ſcourings for running-horſes, either of which may be ſafely given after a heat, to bring away the foulneſs of the body.*

Take a pint of ſyrup of roſes, or for want of it, a pint of ſtrong honey-water, and diſſolve into it caſſia, agaric, and myrrh, of each an ounce, ſhaking them well together in a glaſs, then being mulled and made warm upon a gentle fire, and the horſe newly come from his heat, give it him luke-warm.

*The*

*The other.*

Take a pint of Canary, Malaga, or ſherry, and pulverizing an ounce of the fineſt roſin, put it therein; then add to them ſix ounces of olive-oil, and two ounces of brown ſugar-candy, beaten to powder, with an ounce of rhubarb; mix all together and give it to the horſe.

*Method after his ſcouring.*

As ſoon as you have given it to him, rub his legs well, take off his ſaddle, and if his body be dry, run ſlightly over it with a curry-comb, then a bruſh, and laſtly, rub him over well with a dry cloth, and clothe him up warm, throwing alſo over him, if the weather be cold, a looſe blanket; let him faſt full two hours after taking the ſcouring; and during that time, go not out of the ſtable, but keep him awake by making a noiſe and ſtirring him now and then.

After he has faſted upon the bridle two hours, take a handful of wheat-ears, and coming to him feel the roots of his ears, and under his clothes, next to his heart, and upon his flanks; and if any new ſweat ariſe, or coldneſs, or that his flanks beat, or breaſt moves faſt, then ſtop giving him any thing, it being a ſign there is much foulneſs

ſtirred

ſtirred up, on which the ſcouring is working with a conquering quality, which makes him a little ſick; ſo that you ſhould only take off his bridle, put on his collar, toſs up his litter, and abſent yourſelf (the ſtable being dark and quiet) for two hours, which is commonly the longeſt time ſickneſs will continue. But if you find no ſuch indiſpoſition in him, then give him the ears of wheat, three or four together, and if he eats one handful, give him another, and ſo until he eats three or four handfuls, but no more; then drawing his bridle, and rubbing his head well, give him a little bundle of hay, well duſted; about an hour after, give him a quart of clean oats, with two or three handfuls of ſplit beans among them; and break into them two or three ſhives of bread, clean chipped, and there leave him for two or three hours.

In the evening, before you dreſs him, give him the like quantity of oats, beans, and bread, and when he hath eaten them, bridle, dreſs, and clothe him; but you ſhould not ſtir him abroad that evening, becauſe of the ſcouring working in his body. After the heat, he muſt not have any water. When dreſſed, and has ſtood two hours on his bridle, give him three pints of clean oats, waſhed in ale or beer, which will inwardly cool him as if he had drank water, and you are ſure he can receive no prejudice by it. After he has

eaten all his walhed meat, and reſted upon it a little ſpace, you ſhall at his feeding-times, which have been ſpoken of before (with oats and ſplit beans, or oats with bread, or altogether, or each of them by itſelf, according to the likeing of the horſe) feed him that night in a plentiful manner, and leave a knob of hay in the rack when you go to bed.

The next day early, firſt feed, then dreſs, clothe, ſaddle, air, water, and bring him home, as at other times; only have a more careful eye at his emptying, and obſerve how his greaſe and foulneſs waſteth. At his feeding times, feed him as was laſt directed; give but little hay, and keep your heating days, and the preparation the day before, as hath been declared.

Thus you ſhall ſpend the ſecond fortnight, in which your horſe having received four heats, horſeman-like, given to him, with four ſcourings, there is no doubt but his body will be inwardly clean; you ſhall therefore, in the next fortnight, order him according to the directions following:

*The third fortnight's feeding.*

The third fortnight you ſhall make his bread finer than it was formerly, as thus:

The

*The ſecond bread.*

Take two pecks of clean beans, and two pecks of fine wheat, and grind them well together, then bolt and knead it up with barm, and make it up as the former bread.

With this bread, having the cruſt clean cut away, and oats and ſplit beans mixed together, or ſeparately if you think fit, feed your horſe at his uſual times, as formerly, only with theſe few differences:

Firſt, You ſhall not give the heat that falls upon the day of the week the match is to be run upon, ſo ſmartly and violently as before, that he be not over-ſtrained, and made ſore before the match. You ſhould not, after his heats, give him any ſcourings, but inſtead thereof, inſtantly at the end of his heat, after he is a little cooled and clothed up, and in the ſame place where you rub him, give him one of the following balls, as big as a hen's egg.

*The true recipe of the famous cordial balls, ſo much eſteemed by the generality of every maſter of a good horſe.*

Take aniſeeds, cummin-ſeeds, fenugreek-ſeeds, cardamom-ſeeds, elecampane-roots, and colts-foot, of each two ounces, beaten and ſeared very fine; as alſo two ounces of the flour of

brimſtone; then take an ounce of Spaniſh liquorice, and diſſolve it on the fire in half a pint of white wine; and add, of the chymical oil of aniſeeds, an ounce; of ſallad oil, honey, and ſyrup of ſugar (or for want of it molaſſes) of each half a pint; mix all with the former powders, and with as much fine wheat flour as will bind them together, work them into a ſtiff paſte, which keep in a gallipot, cloſe covered, and give as you find occaſion.

If to prevent ſickneſs, anoint a ball all over with freſh butter, and give it him as a pill, in the morning faſting; then ride him a little after it, or let him ſtand upon his bridle for an hour, feeding and watering according to cuſtom, and do this three or four mornings together. If for a cough, or violent cold, or to fatten a horſe, then give him for a week together, or longer, if needfull.

If your horſe has an inward rattling, by reaſon of a cold or rheum, diſſolve a ball in a pint of warm water, and it will fatten exceedingly. A ball in the morning before exerciſe, will prevent his wearying too ſoon; in the heat of travelling will refreſh his ſpirits, and after it will recover wearineſs to prevent ſickneſs.

*The fourth and laſt fortnight's feeding.*

For the fourth and laſt fortnight, you ſhould make your bread much finer than either of the former.

*The*

*The laſt and fineſt bread.*

Take three pecks of fine wheat, and one peck of beans, grind and bolt them through the fineſt bolter you can get, then kneed it up with new ſtrong ale and barm, beaten together, and the whites of twenty eggs, or more, and no water at all, but inſtead thereof, a ſmall quantity of new milk; then work it up, bake and order it as the former, and with this bread, having the cruſt firſt cut away, clean oats and ſplit beans, all mixed or ſeparate, feed your horſe at his ordinary feeding times, as you did the fortnight before, obſerving the few following directions:

Firſt, You ſhould keep your heating days the firſt week of this fortnight, but the ſecond, or laſt week, you ſhould forbear one heat, and not give your horſe any five days before his match, but inſtead thereof, long and ſtrong airings, and water courſes to keep him in wind.

This fortnight you need not give him any ſcouring at all. If morning and evening you burn frankincenſe in the ſtable, it is wholeſome for the horſe, and he will delight therein.

In this fortnight, when you give him any waſhed meat, waſh it not in ale or beer, but in the whites of eggs or muſkadine, being more wholeſome, and leſs purſey. This fortnight give him no hay but what he takes out of your hand after his

his heats, and that but in little quantity, and clean dusted.

The last week of this fortnight, if he be a foul feeder, you must use the muzzle continually; but if he be a clean feeder, and will touch no litter, then three days before the match is sufficient.

On the morning before your match, feed well before and after watering and airing, and water as at other times before noon, and after noon diminish his portion of meat a little.

Before and after evening airing, feed as at noon, and water as at other times, but be sure to come home before sun-set.

This evening you are to trim and shoe your horse, taking care not to hinder his feeding, nor to interrupt his rest; for we have heard horsemen say, that when they had shoed their horses with light shoes, or plates, the night before their course, they have taken such notice thereof, that they would neither eat what was given them, nor lie down to take any rest all the night following. But a horse must be old, and long experienced in this exercise, to make such subtile observations. However, we advise that things of necessity be done on this day, rather than upon the morning of the course, because on that morning he should have nothing to trouble him.

Late at night, feed as you did in the evening, and give him what he likes best, according to his stomach,

ſtomach, only as little bread and beans as poſſible, then putting on his muzzle, and toſſing up his litter, leave him quiet till next morning.

The next morning, being that of the match day, come to him very early, take off his muzzle, rub his head well, and give him a quantity of oats, waſhed in muſkadine; if he will not eat them, or in the whites of eggs, but refuſes them both, then try him with fine dreſſed oats, dry, and mixed with a little wheat. After he hath eaten them, if he be a ſlow emptier, walk him abroad, and in the places where he uſed to empty, there entice him, which as ſoon as you have done, bring him home, put on his muzzle, and let him reſt until you have warning to make ready. But if he be a free emptier, you need not ſtir him, but let him lie quiet.

When you have warning to make ready, take off his muzzle, and having waſhed his ſnaffle in a little ale or wine, bridle him up; but before you do that, if you think him too empty, give him three or four mouthfuls of the waſhed meat laſt ſpoken of; then bridle up, and dreſs him; afterwards, pitching your ſaddle and girths with ſhoemaker's wax, ſet it on his back, and girth it gently, ſo that he may only feel the girths, but have no ſtraitneſs. Then lay a clean ſheet over the ſaddle, and over it his ordinary cloths, then his

his body-cloth and breaſt-cloth, and wiſp him round with ſoft wiſps; and being ready to draw out, give him half a pint of the beſt ſack in a horn, and lead him away.

In all your leading, uſe gentle and calm motions, ſuffering him to ſmell upon any dung, and where you find ruſhes, long graſs, heath, or the like, walk in, and entice him to urine; but if you find no ſuch help, then in ſome certain place where you lead him, and eſpecially near to the place you are to mount, and having accuſtomed him to it before, break ſome of the ſtraw where-with he is wiſped, under him, and thus entice him, if you can, to ſtale or urine, and if any white or thick foam or froth ariſe about his mouth, wipe it away with a clean handkerchief, and carrying a bottle of clean water about you, waſh his mouth now and then with it.

When you are come to the place of ſtarting, before you unclothe the horſe, rub and chafe his legs well, pick his feet, and waſh his mouth with water.

After you have gone through the above preparations, mount his rider, and having adjuſted his ſtirrups, let him walk him ſoftly to the ſtarting poſt, and there ſtarting fair, let him run him to the beſt advantage.

*Some*

*Some uſeful obſervations while a horſe is preparing for a match.*

If his dung be neither ſo thin that it will run, nor ſo thick but that it will a little flatten on the ground, and of a pale yellow colour, then is the horſe clean, and well fed. If in round pellets, and blackiſh or brown, it ſhews inward heat; if greaſy, it ſhews foulneſs; if red and hard, then he hath had too ſtrong heats, and coſtiveneſs will follow. If it be pale and looſe, it ſhews inward coldneſs of body, or too moiſt feeding.

If his urine be of a pale yellowiſh colour, rather thick, and of a ſtrong ſmell, it ſhews health. If it be of a high complexion, clear and tranſparent, like old beer, then he is inflamed in his body, having taken ſome ſurfeit. If it be like blood, or inclining to blood, he hath been over rode, or rode too early after winter graſs. If green, it ſhews a conſumption of the body. If with bloody ſtreaks, an ulcer in the kidney; if black, thick, and cloudy, it portends death.

If he ſweat ſtanding ſtill in the ſtable, or walking a foot-pace, or the like; or if his ſweat be white and frothy, like ſoap-ſuds, then is he foul, and wants exerciſe; but if the ſweat be black, and as it were only water thrown on him, then he is luſty, and in good caſe.

Although we have given no directions for watering in the evening, after a heat, yet you may in the three laſt fortnights (finding your horſe clean) ſomewhat late at night give him a reaſonable quantity of water, made milk-warm, and faſting about an hour after it. If the weather be unſeaſonable, you ſhould at your watering-hours, give him in the houſe warm water, throwing into it a handful of wheat, bran, or oat-meal, the latter is the beſt.

# HINTS

TO THE

# PURCHASERS

OF

# HORSES.

A Gentleman intending to purchaſe a horſe, ſhould recollect both the certain and probable uſes for which he deſigns him, if he would ſuit his choice to his purpoſe. In this country in particular, ſo much attention is paid to the propagation of horſes, that we may fairly be ſaid to poſſeſs a ſeparated breed, adapted, as it were, peculiarly to each of the various ſervices to which mankind has found means to train this incomparable animal.

External appearances are generally ſo juſt to his real properties, that a judicious obſerver on ſound principles, will ſeldom, if ever, be materially diſappointed.

Univerſality of aſſent, proves the juſtice of this poſition. In practical application it is carried, perhaps, to an extravagant length. Few men will heſitate to pronounce a ſmall neat-limbed horſe to be of the Spaniſh breed; one of the hook-noſe, to be of the Neapolitan; the neat head and ſleek body, to be of the Barbary; and a ſtrong well-jointed one, to be of what is called the true Engliſh breed. And as they are ſeverally regarded in theſe lights, will diſpoſe them into the manage, the hunt, the ſwift draft, and the heavy. They tell us that colour varies with conſtitution; and where fancy does not ſway, the judgment will determine as to the good qualities of a horſe, and the bad ones, by the colour of his coat.

For inſtance, a coal-black, without any mixture of other coloured hair, is ſubject to choler, is obnoxious to peſtilence, fevers, inflammations of the liver, and other hot diſeaſes; but are fierce and intrepid in their nature, and are beſt adapted for war, &c. &c.

A horſe of a bright or dark-bay colour, with an open chearful countenance, is eſteemed fit for running, hunting, or travelling; they are alſo ſanguinary and ſpirited in their deportment. Of the ſame temperament are the white, flanked with a mixture of hair of a ſilver or black colour, with a white ſtar, white foot, &c. The diſeaſes theſe horſes

horſes are ſubject to, are (they ſay) conſumptions and leproſy. A horſe that is pied, or pie-bald, pale yellow, or cream-coloured, is phlegmatic, and fitteſt for the cart or mill; they are not to be choſen for ſwiftneſs, or ſhould ſome happen to be ſwift, they cannot hold out long. They are ſubject to leanneſs and the ſtaggers, coughs, watery humours, and the like.

The dark-bay, with long white hair, ruſſet, aſh-colour, cheſnut, grey, or mouſe-coloured, are ſubject to inflammations, ſpleen, dropſies, phrenſies, oppreſſions of the heart, and pains in the ſtomach. Where a horſe is found with a mixture of all theſe colours, which very rarely happens, he is ſaid to be unſtable in his conſtitution, and all the diſeaſes aſcribed ſeparately to each colour, will predominate by turns in him.

Buyers and ſellers are actuated as we have now ſtated it.

To chuſe a riding-horſe for eaſe and gentleneſs, he muſt be perfect in ambling, and obſerve in the movement of his legs that he performs it equally ſmooth and nimbly; for if he tread falſe, he will be both uneaſy and unſafe.

The trot, or, as ſome call it, the lofty pace, moſt properly belongs to horſes. However, there are many riding horſes that are gently eaſy in their trot, and ſuch ſeldom fail to gallop well. Obſerve that the horſe you are about to purchaſe, has

has not got the ſwift cut in his gallop, and that he does not croſs one foot over another; that he leads with his off fore-foot, and ſmoothly and regularly follows with the reſt.

As many defects in horſes may be artfully concealed, we ſhall juſt hint to the reader the general method of examining horſes at ſales, and thoſe precautions which are invariably obſerved by thoſe who have had the beſt claim to the title of connoiſſeurs in horſes; and with this laſt, ſhall finiſh this ſubject.

Having firſt learned what you can of the horſe's pedigree and breed that you intend to purchaſe, let him be brought out before you, after having been thoroughly rubbed down; then cauſe the ſaddle and bridle to be taken off, and a halter put upon his head: ſtand then exactly before him, and obſerving his countenance, take notice that it be open, ſprightly, and chearful; mind that he is well proportioned, and ſtands well on his legs; that his ears be ſmall, thin, taper, and terminating in a point. Theſe are indications of a free, tractable, and mettled horſe. If the eyes be lively, black, brown, or protuberant; if they move with quick motion, not languid; if the black of the eye nearly fills the fleſhy orb, and but a little of the whites appear, they are ſigns of a healthy good horſe; but if his brows are contracted, his looks ſullen, dejected, melancholy; his

his ears thick, flabby, lolling, &c. theſe are ſigns of his being ſickly, untractable, and moroſe. When the cheeks are thin, the windpipe full, large, ſmooth, and free from lumps and kernels; when the jaws ſtand even, and the teeth ſhut like a box; theſe are all good ſigns.

See that from his elbows to his fore-knees, he be well proportioned, ſtraight, well jointed, and free from ſcabs, ſcars, and blotches. Theſe laſt are the fore-runners of cancerous ulcers.

The properties of a good hoof are, that it ſhould be black and round, for a long whitiſh hoof denotes the horſe to be ſubject to foundering.

The hair ſhould lie ſmooth on the corner of the hoof, and careful inſpection ought to be made that no bony excreſcences appear about the coronet, theſe being preſages of the ring-bone. When a view is taken of a horſe's poſteriors, or hinder parts, the perſon ſhould ſtand at ſome diſtance, where he may more advantageouſly ſee whether the hips be broad, round, ſmooth, and even; the thigh thick and well fleſhed; the joint below the thigh ſhould be critically examined, and if chops or ſores appear, they preſage ſalanders; if a ſwelling, with a full and protuberant vein, the blood-ſpavin.

Thus have we completed a practical Eſſay on the Diſeaſes by which Horſes are liable to be affected, and propoſed adequate Remedies: our aim was to ſuperſede quackery, and to bring experimental

perimental farriery into practice and repute. We may, as we now do, affirm, that we have not hazarded a ſingle preſcription which is not efficacious, and on which we would not ſtake our reputation. When we have ſaid this, it will be believed, that ſtudy and practice warrant our aſſertion, and that we have therefore a right to that emolumentary return which an indulgent public never with-holds from the deſerving.

ON THE

# VICES

OF

# HORSES.

DEALERS in horſes uſe the term *vices*, to expreſs certain faulty habits or cuſtoms in thoſe creatures, which render them troubleſome to the rider, and are never to be woren off, but by attention to the regular methods.

The following are the tricks generally underſtood as vices by dealers, and their methods of preventing, correcting, and curing them:

Firſt, If a horſe carry his head or neck awry, ſtrike him twice or thrice with the ſpur on the

contrary ſide; but if he be very ſtiff-necked on the right ſide and very plying or bending on the left, the rider is to hold the right rein ſhorter than the other, and give him ſudden checks every time he inclines that way, having a ſharp wire faſtened in the reins, that ſtriking in his neck he may be compelled to hold it ſtraight; but in this, care muſt be always taken to check him upwards, for otherwiſe he will get a habit of ducking his head, which will prove very troubleſome.

Secondly, If a horſe is apt to ſhake his head and ears upon the leaſt occaſion, or move his ears when he is going to kick or bite, or caſt his rider, the way of curing this, is to ſtrike him on the head with a wand, as ſoon as he ſhews the firſt attempt to it; and, at the inſtant of ſtriking him, he is to be checked with the bridle, and be ſtruck with the ſpur on the contrary ſide; this will put him out of his pace, and he is then to be ſtopped, that he may have leiſure to underſtand the rider's meaning. Every time that he ſtarts or winces, which are ſignals that he is going to bite, or to ſtrike with his heels, the ſame is to be done, and he will, by degrees, be broke of theſe habits.

Thirdly,

Thirdly, If a horſe is ſubject to ducking down his head frequently, the rider muſt, every time he is guilty of it, check him ſuddenly with his bridle, and at the ſame time ſtrike him with the ſpurs, in order to make him ſenſible of his fault. If he be ſtanding, he is thus to be made to bring his head in the right place as he ſtands; and when he does ſo, he is to be cheriſhed, that he may underſtand the rider's meaning, which, in time, he will certainly do.

Fourthly, If a horſe be ſkittiſh, and apt to ſtart, ſo that the rider is never free from danger, while on his back, the cauſe of the malady is firſt to be carefully enquired into; if it be found to proceed from a weak ſight, which repreſents objects to him other than they really are; the method of curing him is, every time he does it, to give him leiſure to view the things, and ſee what they really are; he muſt have time to view them well, and then be rid gently up to them. If, on the contrary, his ſkittineſs depends on his being naturally careful and alarmed at every noiſe, he is to be cured of it by the inuring of him to loud noiſes of many kinds, as firing of guns, drums, trumpets, and the

like; and he will, in time, come to take delight in what he was before afraid of.

Fifthly, If a horſe be reſtive, and refuſe to go forward, the rider is to pull him backward, and this will often occaſion his going forward; this is uſing his own fault as a means of reclaiming him. The rider is firſt cautiouſly to find whether this vice proceeds from real ſtubbornneſs, or from faintneſs; if from the latter, there is no remedy but reſt; but if actual ſtubbornneſs be the fault, the whip and ſpur, well employed, and perſiſted in, will at length be found a certain cure.

Sixthly, If a horſe rear up on end, that is, if he riſes ſo high before as to endanger his coming over the rider, the horſeman muſt give him the bridle, and bear forwards with his whole weight. As he is going down, he ſhould have the ſpur given him very roundly; but this muſt by no means be done as he is riſing, for then it will make him riſe higher, and probably come over.

Seventhly, If a horſe be ſubject to lie down in the water, or upon the ground, there is no better remedy than a pair of ſharp ſpurs reſolutely applied

plied. But there is ſome caution to be uſed in the applying of them, for bad horſemen generally are the occaſion of the faults in horſes, by correcting them out of due time.

The proper moment of ſpurring is juſt when he is going to lie down; but when this has diverted him from the thought of it, he is not immediately to be ſpurred again. For the doing this frightens the creature, and puts him into confuſion to that degree, that he at length becomes reſtive, and thus one fault is only changed for another, and that perhaps a worſe.

Eighthly, If a horſe be apt to run away, very cautious means muſt be uſed to break him to it. The rider muſt be gentle, both with a ſlack curb, and keeping an eaſy bridle-hand. He is firſt to be walked without ſtopping him; but only ſtaying him, by degrees, with a ſteady, not a violent hand, always cheriſhing him when he obeys; when he is thus made very manageable in his walk, he is put to his trot, and finally to his gallop; and from theſe he is to be brought into a walk again, always by degrees, and ſtaying him with a ſteady hand. By uſing this method from time

time to time, with judgment and patience, it is probable he may at length be cured.

Ninthly, If a horſe is apt to fly out violently, it is certain, that the more the bridle-rein is pulled, and the more he is hurt by tugging the curb, the faſter he will run; the beſt method is therefore, if there be field-room enough, to let him go, as ſoon as he is going, by ſlackening the bridle, and giving him the ſpur continually and ſharply, till he ſlacken of his own accord. Thus by degrees, he will find that himſelf is the ſufferer, by all his flights, and he will then leave them off, though he could be never broke of them any way elſe.

Tenthly, Some horſes will not endure the ſpurs when they are given them, nor ever go forwards; but faſtening themſelves to them, they will ſtrike out and go back; and if they are preſſed more hard, they will fall to ſtaling without ever going out of the place. If the horſe who has this vice be a gelding, it it will prove very difficult to cure him of it. A ſtone-horſe or a mare are much eaſier cured; but even theſe will be trying at it again afterwards; and if ever they get

get the better of their rider, they will not fail to keep it up in this particular.

Every horſe, of whatever kind, that has this fault of cleaving to the ſpurs, as the jockies call it, and not going forwards with them, is to be rejected, in the buying for a gentleman's riding, for it is a ſign of a reſtive nature, and is a fault generally accompanied with many others.

# SUPPLEMENT.

IN order to inſtruct, and give the reader a true knowledge of phyſic in the practice of farriery, the following is a liſt of ſome of the moſt uſeful drugs mentioned in this treatiſe, with a ſhort account of their natures, qualities, and medicinal virtues :

*Aloes.*

This proves an highly-powerful and efficacious medicine; ſince, by its balſamic, corroborative, and lenitive virtues, it abſterges and eliminates the viſcid humours, corrects ſuch as are vitiated, and, corroborating the relaxed tone of the ſtomach, removes the ſpaſms and flatulences of the *prima via*, and is of great account among ſurgeons, in the tincture of myrrh, for external intentions. There is ſcarce any one drug of more univerſal uſe in medicine than this.

*Diaphoretic antimony.*

This medicine cauſes perſpiration, and is of great ſervice in fevers, peſtilential diſorders, and alſo for all eruptions on the ſkin, being a great cleanſer and ſweetener of the blood, &c. Not-

 withſtanding

withſtanding the expence of making this medicine genuine is but little, yet the avarice of ſome chymiſts among us, order common whiten to be mixed with it, which renders their profits in the ſale of it much greater.

*Butter of antimony.*

This is an immediate cauſtic, cauſing an eſchar very quickly, which ſeparates the foul fleſh in a ſhort ſpace of time. Its general uſe is for cankered feet.

*Aqua-fortis.*

This is uſed in medicine, only as a menſtruum in other preparations, but its nature and quality are much the ſame with the butter of antimony, and is uſed for horſes as a cauſtic, and is of ſervice in looſening a core of rotten fleſh.

*Crude antimony.*

This is a heavy metalline ſubſtance, compacted, as it were, of long ſhining needles, before it is made into a powder. It is given as a diaphoretic and deobſtruent, and is an excellent alterative in the ſcabies and mange in horſes and cattle.

*Alum.*

It is drying, aſtringent, and incraſſating, and when melted with a due proportion of dragons-blood,

blood, is an excellent ſtyptic either for man or horſe.

*Aniſeed*

Promotes appetite, and affords relief in phlegmatic and cold diſorders of the ſtomach and inteſtines.

*Balſam of Peru.*

The beſt ſort of this medicine is of an admirable fragrancy; it heals, dries, and diſcuſſes, and is a great ſtrengthener and warmer of the nerves, and is ſerviceable in cuts or green wounds.

*Balſam of ſulphur, with oil of turpentine.*

This is an excellent medicine for all diſorders of the breaſt, likewiſe for ulcerations and obſtructions of the urinary paſſages. It is highly recommended to the human ſpecies for expelling and diſſolving the ſtone.

*Bay berries.*

Theſe are the fruit of an aromatic oily-leaved tree, very commonly known; they are heating, drying, emollient, and reſolvent, and are principally ordered to provoke urine.

*Benjamin.*

This is of a warming, drying, diſcuſſing, diſſolving, and purifying nature, reſiſts putrifaction, and is good againſt diſeaſes of the lungs and kidneys.

*Yellow baſilicon.*

This is an ointment uſed to incarn wounds, and has the reputation of a very eminent perſon, Meſue, who is aſcribed as its author.

*Bole-armenic.*

It is ponderous, pingueous, and of a ſtyptic taſte; that which is called the beſt ſort of it, is dug out of the mines in Turkey. It is very rare that ſort is ſold in the ſhops, for what we generally get from the druggiſts, is a ſort that comes from Spain and Normandy, and is thought to be little different. It is an alexipharmic, and corrects acidities in the blood; it is alſo aſtringent in ſome degree, and for that reaſon is uſed in fluxions of humours; when applied externally, it is of a drying quality, and induces cicatrices on wounds.

*Bears-foot.*

The parts uſed in medicine are the root and leaves; the root has the ſame virtue with that of the black hellebore, and purges the lower belly.

Farriers

Farriers and graſiers put a great confidence in this herb againſt the contagious diſtempers among their horſes and horned cattle.

*Birthwort.*

The powder of this root, and its extract with ſpirit of wine, are uſed in liniments deſigned for cleanſing inveterate, ſordid, and malignant ulcers.

*Cream of tartar.*

The virtues of this medicine are cooling, gently carthartic, and, as moſt ſaline purges, it paſſes off pretty much by urine.

*Calomel.*

This is a great ſweetener of the blood and juices, and may be given to horſes in half-ounce doſes.

*Camomile*

Digeſts, relaxes, mollifies, and alleviates pain; is a fine diuretic, and is uſed in the compoſition of clyſters.

*Cloves.*

The beer or wine wherein they are boiled, is of uſe in nervous diſorders among horſes.

*Camphor*

*Camphor.*

This is a pellucid gum, which does not flow from the tree, but is obtained out of its wood by a particular way of ſublimation, and is brought into Europe from China, or the iſland of Borneo, in the Eaſt-Indies; when a diaphoreſis is to be encouraged, nothing will ſooner raiſe one, and is of a ſingular efficacy in removing external inflammations, whether of the eyes or otherwiſe.

*Caraway-ſeeds*

Are one of the four hot ſeeds; they are like the reſt, ſtomachic.

*Cardamoms*

Are ſeeds that aid digeſtion, expel wind, and are excellent in all diſorders incident to the head.

*Cummin-ſeed*

Is carminative, and is of infinite ſervice in healing inflammations of the kidneys.

*Cinnamon*

Is an aromatic bark, and is of a ſtimulating and corroborative quality.

*Diapente*

*Diapente*

Is a preparation of five ingredients; it opens obſtructions of the inteſtines, &c.

*Diaſcordium*

Is an aſtringent.

*Dragons-blood.*

The weeping of a tree ſomething like a cherry-tree, as it bears fruit not unlike a cherry; it is ſaid the ſkin of the tree when pulled off, reſembles a dragon; this drug is experienced to be of an agglutinating quality. It is a powerful drier, an aſtringent, and has a ſharp diuretic virtue.

*Diagridium*

Is a briſk cathartic, and a ſtrong diuretic; it is therefore given in other preparations to purge water.

*Daucus-ſeed*

Is called carrot-ſeed; it is a diuretic, and an excellent remedy for the ſtrangury in horſes or cattle.

*Elicampane-root.*

It is very warm, opening, and deterſive; it cleanſes the lungs from tartarous and viſcid ob-

ſtructions;

ſtructions; it alſo opens the urinary ducts, and when blended with brimſtone and hellebore-root, is of great ſervice in cutaneous diſorders.

*Euphorbium*

Is a gummy reſinous ſubſtance, the produce of Africa, and is uſed in ſurgery for cleanſing foul ulcers, and exfoliating of carious bones.

*Japan earth.*

It is of a dark purple colour, very auſtere upon the palate. It is famous for ſtopping fluxes of the belly, and is good in catarrhs.

*Ægyptiacum.*

This is an ointment that is applied to cleanſe foul ulcers, and to keep down fungous fleſh.

*Fenugreek-ſeeds,*

Adminiſtered internally, are ſoftening, relaxing, and healing; and for external application to tumours, they are ripening, diſcuſſing, and digeſting, and ſeldom omitted in cataplaſms.

*Frankincenſe, or olibanum.*

When externally applied, it diſcuſſes catarrhs, incarns hollow ulcers, and brings them to a cicatrix; it conglutinates recent wounds, is an excellent medicine for chilblains, and mitigates malignant

malignant ulcers, not only of the arms, but alſo of other parts.

*Fennel.*

The root, leaves, and ſeeds, are uſed; the root is one of the five aperient roots, and the ſeeds are claſſed among the great carminative ſeeds, and provoke urine.

*Ginger.*

This is a root that is cultivated in the Weſt-Indies, and generally brought over dry; it is very hot and penetrating; and when powdered and mixed with aloes, &c. will prevent the phyſic from griping.

*Gentian-root.*

No other part of this plant is uſed in medicine; it is extremely bitter, warms the ſtomach, and cauſes digeſtion; it is alexipharmic, and a great antidote againſt poiſons, as it wonderfully promotes ſenſible and inſenſible perſpiration.

*Garlic.*

Only the root of this is uſed in medicine; it is very aperient and diſcuſſive, being loaded with very ſubtile and volatile parts, and provokes urine.

*Guaiacum.*

This gum is much of the ſame virtue as the wood, though more efficacious, cauſing inſenſible perſpiration; upon that account it is good in ſuch cutaneous caſes as proceed from obſtructions of the perſpirable matter in the miliary glands.

*Gum-dragant.*

It eaſily diſſolves in any aqueous menſtruum, to which it will give the conſiſtence of ſyrup; it is moiſtening, lenient, emplaſtic; corrects acrimony, and incraſſates. Five or ſix grains for a man; but five or ſix drachms of it diſſolved in milk, will effectually cure a horſe, or cattle in voiding blood by urine.

*Honey.*

The medicinal virtues of this are many, inſomuch that there is no author from the moſt ancient times, but makes mention of it, eſpecially from the divine Hippocrates down to this age. It wonderfully promotes expectoration; there is no diſorder from phlegm, or any thing which is the produce of a cold conſtitution, which it is not of ſervice in; it is alſo made uſe of in ſurgery, to cleanſe foul ulcers.

*Hartshorn*

*Hartshorn, calcined.*

This is a very valuable medicine among the preparations of powders for the contagious diſorder in cattle and horſes; it extremely rouſes the ſpirits, and is of infinite ſervice in unmerciful fevers, which burn up the vitals, and turn the conſtitution quite out of frame. The powder of this being adminiſtered as is ſet forth in this Treatiſe, will tenderly cheriſh it into its former vigour again. It ſupplies the parched fibres with freſh fluid ſuited to their exigencies, and helps to keep on the main ſprings and motions of life, which otherwiſe might languiſh and ſtand ſtill.

*Hellebore-root,*

Is the predominant ingredient for the cure of any ſcorbutic diſorder, by applying it externally.

*Jalap-root.*

This medicine powerfully purges and carries off all ſcirrhous humours, and needs not any other medicine to promote its operation.

*Juniper-berries,*

Are much uſed for expelling wind, removing obſtructions, and making a free paſſage for the urine.

*Long-pepper,*

Is accounted alexipharmic; expels wind, and promotes digeſtion.

*Liquorice.*

The roots are pectoral, and are of great uſe in diſorders of the lungs, &c.

*Quick-lime,*

Is of uſe in drying up old ulcers, &c.

*The ſeed of common flax, or linſeed-oil.*

They are cooling, ſoftening, and healing; and the oil mitigates the pain of rheumy coughs, and is an excellent balſamic medicine adminiſtered with others.

*Lunar-cauſtic.*

This is made of pure ſilver in a ſand-heat, with twice its weight of aqua-fortis; it is a moſt powerful cautery, and by frequently touching foul fungous ulcers with it, perfectly completes a cure.

*Muſtard.*

The ſeeds attenuate groſs viſcid humours, and are heating, moderately moiſtening, emollient, paregoric, and very diuretic.

*Myrrh.*

*Myrrh.*

It is of a heating, drying, opening, and ſubaſtringent nature; when it is adminiſtered internally, it is ſaid to attenuate, maturate, diſcuſs, and reſiſt putrifaction; and when externally applied, it cleanſes and cures wounds and ulcers.

*White corroſive mercury.*

It conſumes warts, and obſtinate calloſities in ulcers.

*Salt of nitre.*

It removes all groſs obſtructions, and opens the pores of the ſkin through which the hot and fiery particles are exhaled, and ſtimulates the ducts and glands to a more copious ſecretion of lymph, moiſtens the body, relaxes and ſoftens parts ſpaſmodically contracted.

*Sweet ſpirit of nitre,*

Reſtores the appetite, promotes ſweat, and provokes urine.

*Oil of aniſeed,*

Is a carminative medicine; it expels flatulencies in the inteſtines, and is good, when given in purgative

purgative medicines, to prevent their gripings, &c.

*Oil of caſtor*

Is given as a purge with ſucceſs, in all nervous diſorders.

*Oil of Turpentine,*

When blended with other medicines, is of ſervice in extirpating ſwellings and ſtrains, and is of ſervice in wounds and bruiſes.

*Oxycroceum*

Is a plaiſter, and is a fine reſolvent; it fortifies the nerves and muſcles, and relieves pain.

*Oil of vitriol*

Serves as a menſtruum in ſome metalline preparations; it is extremely cauſtic, therefore it is neceſſary to keep it under a wax or glaſs ſtopple.

*Oil of Peter.*

It is much commended in many external applications, ſuch as pains in the joints, occaſioned by ſtrains or otherwiſe.

*Train oil,*

Anſwers much the ſame purpoſe, only not quite of ſo hot a nature.

*Amber,*

*Oil of amber,*

When applied externally, reſtores contracted paralytic torpid limbs; it is a moſt excellent medicine blended with others, for an embrocation.

*Onions,*

When roaſted, and externally applied, ſoften hard tumours; and if applied with ſalt, will cure a burn, before the bliſter riſes.

*Parſley.*

Its roots are hardly to be diſtinguiſhed from the fennel, and are of the ſame ſervices in medicine as the fennel-root, for cleanſing the viſcera, particularly the kidneys, and are one of the five opening roots.

*Peruvian bark,*

Promotes perſpiration, is of a bitter quality, and is univerſally allowed to be a proper remedy for fevers.

*Burgundy pitch,*

Is a very drawing and ſticking medicine; it is therefore uſed with other ingredients, for a hot charge, or ſtrengthening plaiſter.

*Powder*

*Powder of red precipitate.*

It is a good eſcharotic, and much uſed for that purpoſe in baſilicon, and other dreſſings.

*Matthew's pill.*

Is a powerful opiate.

*Quickſilver,*

When it is judiciouſly adminiſtered, is a moſt excellent medicine; it opens the pores, ſmall veſſels, and ducts of the glands; reſolves obſtructed humours in the remoteſt parts of the body, and performs wonders in cutaneous puſtules, ſcabs, and other eruptions of the ſkin.

*Roſemary.*

It is of uſe in all nervous complaints, eſpecially ſuch as ariſe from too great moiſture and cold, as they are hot and drying.

*Rue.*

It is alexipharmic, and reſiſts all kinds of poiſons and malignities; it is alſo of ſervice in obſtructions in the urethra and bowels.

Salt

*Salt of vitriol.*

This is a very aperitive and cleanſing medicine.

*Saffron.*

It is poſſeſſed of aromatic ſtimulating qualities; it purges the lungs from viſcid phlegm, is a good pectoral, and greatly exhilirates the animal ſpirits.

*Sulphur.*

This medicine is adminiſtered internally, to repel groſs humours, and purify the blood.

*Sope.*

Caſtile ſope is of a very penetrating, warm, cleanſing nature, and deterges the moſt minute paſſages, and is a powerful diuretic.

*Salt-petre*

Is cooling, and a cleanſer of the urinary ducts, being a great diuretic.

*Sal-ammoniac.*

It preſerves all animal ſubſtances from putrifaction, and is the nobleſt aperient, attenuant, reſolvent, ſternutatory, diaphoretic, ſudorific, and diuretic.

*Sugar of lead*

Is an aſtringent ſtyptic.

*Salt of wormwood*

Promotes appetite, and helps digeſtion.

*Salt of tartar*

Is of ſervice for all diſeaſes which are ſeated in the nerves, as palſies, apoplexies, epilepſies, &c.

*Steel prepared*

Is a great aſtringent.

*Spermaceti*

Is an excellent balſamic in many inward diſorders.

*Syrup*

*Syrup of buckthorn,*

Is a brisk cathartic, and carries off watery humours.

*Spirit of sal ammoniac*

Is of service when externally applied to paralytic limbs, and all nervous complaints where there is pain.

*Storax*

Is an excellent pectoral, being of great service in coughs, and disorders of the lungs, &c.

*Snake-root*

Is used with success in raising a diaphoresis; so that its warmth occasions its use in nervous and paralytic complaints.

*Tutty prepared,*

Dries acrimonious humours of the eyes, is applied with success in curing ulcers on the cornea and eye-lids; it also carries off fluxes of fistulous humours in the eyes.

*Turmeric*

Opens the obſtructions of the inteſtines, and provokes urine.

*Barbadoes-tar.*

It has a ſtrong ſcent, and not unlike the common tar; it is recommended to be given in obſtinate tickling coughs, and when applied outwardly, is of ſervice in burns, ſcalds, and inflammations; and among the people in the Weſt-Indies, it is in great vogue for almoſt every diſorder, both internal and external; but it is our opinion that the common tar is endued with the ſame virtues.

*Emetic tartar.*

It operates by ſtool, and is proper in all hypochondriacal melancholy; it cannot fail of doing good, by accelerating the motions of the fluids, and rouſing the ſpirits.

*Venice-treacle*

Is a ſtrong opiate.

*Tincture*

*Tincture of caſtor*

Is of uſe in a lethargy, apoplexy, epilepſy, palſy, vertigo, tremor of the limbs, defluxions on the joints, &c.

*Turpentine*

Is very detergent, and therefore preſcribed in all ſuſpicions of abſceſſes and ulcerations.

*Roman Vitriol*

Being an acid ſalt, is an excellent ſtyptic.

*White Vitriol*

Is principally uſed to allay inflammations of the eyes, &c.

*Vitriol of tartar*

Is a ſtrengthener of the inteſtines, by its aſtringency.

*Verdegris*

Is applied externally to keep down fungous fleſh, and is of great ſervice in drying up ulcers.

*Vinegar*

Is of an acid, reſolvent, and refrigerating quality.

*Wormwood*

*Wormwood*

Promotes an appetite, and helps digeſtion.

*White of an egg.*

It is of a glutinous binding quality, and is mixed with bole-armenic, &c. to defend and cool any part that may be ſtrained.

*Mellepides, or Wood-lice.*

They are diuretic, abſterſive, and of ſervice in all diſorders of the reins; and are alſo a principal medicine in the jaundice, and abound with a nitrous ſalt, which derives from what they feed on.

# ADDENDA.

THAT this work may be as extenſively uſeful and intereſting as poſſible, we conceived it might not be unacceptable to our readers to be preſented with the

## SUBSTANCE OF THE LAST ACT

### RELATIVE TO

### POST-HORSES, AND HORSES LET TO HIRE.

THE laſt Act, which commenced on the firſt of Auguſt, 1785, repeals all previous Acts on that ſubject, and then proceeds to this effect:---That after the ſaid firſt of Auguſt, there ſhall be levied and collected throughout the kingdom, the ſeveral rates and duties following; that is to ſay,

Every

Every poſt-maſter, inn-keeper, &c. who ſhall let horſes to hire for travelling poſt, ſhall pay for an annual licence, 5s.

The ſaid duties ſhall be under the management of the Commiſſioners appointed for ſtamp-duties, any two of whom (or perſons authoriſed by them) may grant licences for letting out horſes to hire, to all perſons who ſhall apply for them; which licence muſt be renewed ten days previous to the expiration of the year for which it was granted.

Perſons letting out horſes to travel poſt, &c. without a licence, ſhall forfeit 10l.

No perſon ſhall keep more than one inn, or place for letting horſes, by virtue of one licence, on penalty of 20l.

Licenſed inn-keepers, ſtable-keepers, &c. ſhall cauſe the words, LICENSED TO LET POST-HORSES, to be painted on the fronts of their houſes, &c. before they let horſes to hire, on penalty of 5l.

Commiſſioners of ſtamp-duties ſhall deliver to every perſon taking out a licence, printed or written papers, entit'ed, "*Stamp-Office Weekly Accounts*," in which ſhall be inſerted the day of the week, and blanks left for the number of horſes and miles, and name of the town and place

to which ſuch horſes ſhall be hired to go; and alſo for the day of the month, and the names of the poſtillions or drivers employed.

Tickets unaccounted for, ſhall be paid for after the rate of 1s. 9d. for each horſe, according to the number of horſes expreſſed by the figures on the tickets, and in the receipts given by ſuch poſt-maſter, &c. for the ſame.

Poſt-maſters, &c. letting out horſes to travel poſt, or by day, ſhall receive (for the uſe of his Majeſty) of the perſons hiring the ſame, three half-pence for every mile ſuch horſe is to travel; or 1s. 9d. for each horſe, when the diſtance cannot be aſcertained; and ſhall deliver to them ſtamp-office tickets, properly filled up.

Travellers ſhall deliver their tickets at the firſt turnpike, &c. they ſhall paſs through.

Day-tickets to be delivered in like manner; in return for which, the gate-keeper ſhall give an exchange-ticket, which ſhall be ſhewn at every turnpike during that day.

No traveller ſhall pay for more miles than ſhall be expreſſed upon his ticket. If any inn-keeper, &c. ſhall inſert in ſuch ticket, the name of any other town or place than that to which the horſes ſhall be hired to go, or ſhall fill up a

leſs number of miles than is charged to ſuch traveller, ſhall forfeit 10l. and the commiſſioners ſhall, if they think fit, after the conviction of the offender, refuſe to grant him any licence in future.

Horſes hired for any leſs time than two days, ſhall be deemed to be hired for one day.

No poſt-maſter, &c. at whoſe houſe any traveller ſhall change horſes, ſhall let them any otherwiſe than by the mile, or ſtage.

Where inn-keepers cannot furniſh horſes to travellers, they are to give them a freſh ticket, properly filled up, &c.

This act not to extend to horſes uſed in hackney coaches, &c.

All horſes hired by the mile, or ſtage, ſhall be deemed liable to travel poſt.

Perſons counterfeiting or offering any forged ticket, note, or certificate, ſhall forfeit fifty-pounds.

Perſons reſiding in London or Weſtminſter, or within five miles thereof, or in the bills of mortality, ſhall deliver their accounts at the ſtamp-office the firſt Tueſday or Wedneſday in every month.

All

*Duties on running-horſes.*

For every horſe entered to ſtart, or run for any plate, prize, ſum of money, or other thing, ſhall be paid a duty of 2l. 2s. And the owner of every ſuch horſe ſhall previouſly pay the ſum of 2l. 2s. as the duty for one year, to the clerk of the courſe, or other perſon authoriſed to make the entry, which if he ſhall neglect or refuſe to pay, he ſhall forfeit 20l. The winning horſe pays double duty.

And the clerk of the courſe ſhall, within fourteen days after the receipt thereof, give an account of, and pay the ſame to the diſtributor of ſtamps, on pain of 100l. for not delivering ſuch account, and double the money due at the time of ſuch default, and the diſtributor ſhall make him an allowance of 1s. in the pound for all monies accounted for and paid by him.

Perſons aggrieved, may appeal to the quarter ſeſſions.

FINIS.

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